CHAPTER 5

Provision Transponder and Muxponder Cards

This chapter explains how to provision transponder (TXP), muxponder (MXP), Xponder (GE_XP and 10GE_XP), and ADM-10G cards. The provisioning must be performed before you provision the dense wavelength division multiplexing (DWDM) network and create circuits.

Note Unless otherwise specified, "ONS 15454" refers to both ANSI and ETSI shelf assemblies.

Before You Begin

Before performing any of the following procedures, investigate all alarms and clear any trouble conditions. Refer to the *Cisco ONS 15454 DWDM Troubleshooting Guide* as necessary.

Caution Provisioning TXP and MXP cards can be service affecting. You should make all changes during a scheduled maintenance window.

This section lists the chapter procedures (NTPs). Turn to a procedure for applicable tasks (DLPs).

1. NTP-G128 Manage Pluggable Port Modules, page 5-2—Complete this procedure to provision a multirate pluggable port module (PPM), provision or change the optical line rate of a PPM, or delete a PPM. PPMs provide the fiber interface to the TXP, MXP, and ADM-10G cards. With the exception of the TXP_MR_10G card, all TXPs, MXPs, and ADM-10G cards accept PPMs.
2. NTP-G33 Create a Y-Cable Protection Group, page 5-16—As needed, complete this procedure for TXP, MXP, GE_XP, or 10GE_XP cards that will be protected with Y-cable protection.
3. NTP-G98 Provision the 2.5G Multirate Transponder Card Line Settings and PM Parameter Thresholds, page 5-19—As needed, complete this procedure to change the transmission settings for TXP_MR_2.5G and TXPP_MR_2.5G cards.
4. NTP-G96 Provision the 10G Multirate Transponder Card Line Settings, PM Parameters, and Thresholds, page 5-40—As needed, complete this procedure to change the transmission settings for TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, and TXP_MR_10E_L cards.
5. NTP-G170 Provision the ADM-10G Card Peer Group, Ethernet Settings, Line Settings, PM Parameters, and Thresholds, page 5-63—As needed, complete this procedure to provision the transmission settings for ADM-10G cards.
6. NTP-G333 Add an ADM-10G card to an Existing Topology, page 5-81—As needed, complete this procedure to add an ADM-10G card to an existing topology.

7. NTP-G97 Modify the 4x2.5G Muxponder Card Line Settings and PM Parameter Thresholds, page 5-82—As needed, complete this procedure to change the transmission settings for MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L cards.
8. NTP-G99 Modify the 2.5G Data Muxponder Card Line Settings and PM Parameter Thresholds, page 5-102—As needed, complete this procedure to change the transmission settings for MXP_MR_2.5G and MXPP_MR_2.5G cards.
9. NTP-G148 Modify the 10G Data Muxponder Card Line Settings and PM Parameter Thresholds, page 5-121—As needed, complete this procedure to change the transmission settings for MXP_MR_10DME_C and MXP_MR_10DME_L cards.
10. NTP-G165 Modify the GE_XP or 10GE_XP Ethernet Parameters, Line Settings, and PM Thresholds, page 5-141—As needed, complete this procedure to change the transmission settings for GE_XP and 10GE_XP cards.
11. NTP-G162 Change the ALS Maintenance Settings, page 5-162—As needed, complete this procedure to change the automatic laser shutdown settings for a TXP or MXP card.
12. NTP-G192 Force FPGA Update, page 5-163—As needed, complete this procedure to force an upgrade of the FPGA image on the MXP_MR_10DME_C and MXP_MR_10DME_L cards.
13. NTP-G196 Force FPGA Update when the Card is part of a Protection Group, page 5-164—As needed, complete this procedure to force an upgrade of the FPGA image on the MXP_MR_10DME_C and MXP_MR_10DME_L cards when the card is part of a protection group.

NTP-G128 Manage Pluggable Port Modules

Purpose	Complete this procedure to provision a multirate PPM, provision the optical line rate of a multirate PPM, or delete a single-rate or multirate PPM.
Tools/Equipment	None
Prerequisite Procedures	DLP-G63 Install an SFP or XFP, page 3-57
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note If a single-rate PPM is installed, the PPM screen will autoprovision and no further steps are necessary.

Note When you autoprovision a PPM, initial alarm and TCA defaults are supplied by Cisco Transport Controller (CTC) depending on your port and rate selections and the type of PPM. These default values can be changed after you install the PPM.

Note The hardware device that plugs into a TXP, MXP, GE_XP, 10GE_XP, or ADM-10G card faceplate to provide a fiber interface to the card is called a Small Form-factor Pluggable (SFP or XFP). In CTC, SFPs and XFPs are called pluggable port modules (PPMs). SFPs/XFPs are hot-swappable input/output devices

that plug into a port to link the port with the fiber-optic network. Multirate PPMs have provisionable port rates and payloads. For more information about SFPs and XFPs, refer to the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual.*

Step 1 Complete the "DLP-G46 Log into CTC" task on page 2-27 to log into an ONS 15454 on the network. If you are already logged in, continue with Step 2.

Step 2 Click the **Alarms** tab:

a. Verify that the alarm filter is not turned on. See the "DLP-G128 Disable Alarm Filtering" task on page 9-29 as necessary.

b. Verify that no unexplained conditions appear. If unexplained conditions appear, resolve them before continuing. Refer to the *Cisco ONS 15454 DWDM Troubleshooting Guide*.

Step 3 If you are provisioning a MXP_MR_2.5G or MXPP_MR_2.5G card, complete the "DLP-G235 Change the 2.5G Data Muxponder Card Mode" task on page 5-3. If not, continue with Step 4

Step 4 If you are provisioning a MXP_MR_10DME_C or MXP_MR_10DME_L card, complete the "DLP-G332 Change the 10G Data Muxponder Port Mode" task on page 5-4. If not, continue with Step 5.

Step 5 If you are provisioning a GE_XP or 10GE_XP card, complete the "DLP-G379 Change the GE_XP or 10GE_XP Card Mode" task on page 5-6. If not, continue with Step 6.

Step 6 If you are provisioning a PPM on an ADM-10G card, complete the "DLP-G411 Provision an ADM-10G PPM and Port" task on page 5-7. If not, continue with Step 7.

Step 7 Complete the "DLP-G277 Provision a Multirate PPM" task on page 5-8 for TXP, MXP, GE_XP, or 10GE_XP ports with multirate PPMs. If you already preprovisioned the multirate PPM (DLP-G273 Preprovision an SFP or XFP Slot, page 3-58), skip this step and continue with Step 8.

Step 8 If you are provisioning an IBM ETR_CLO (External Time Reference – Control Link Oscillator) or InterSystem Coupling Link (ISC) service on the PPM, complete "DLP-G274 Verify Topologies for ETR_CLO and ISC Services" task on page 5-9. Otherwise, continue with Step 9.

Step 9 Complete the "DLP-G278 Provision the Optical Line Rate" task on page 5-11 to assign a line rate to a TXP or MXP port after the PPM is provisioned. (This task is not performed for GE_XP or 10GE_XP cards.)

Step 10 If you need to delete a PPM at any point in this procedure, complete the "DLP-G280 Delete a PPM" task on page 5-15.

Stop. You have completed this procedure.

DLP-G235 Change the 2.5G Data Muxponder Card Mode

Purpose	This task changes the card mode for MXP_MR_2.5G and MXPP_MR_2.5G muxponder cards. The card mode determines which PPMs can be provisioned for the card.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_2.5G or MXPP_MR_2.5G card where you want to change the card settings.

Step 2 Click the **Provisioning > Line > SONET** (ANSI) or **SDH** (ETSI) tabs.

Step 3 Locate the Trunk port table row and verify that the Service State column value is OOS-MA,DSBLD (ANSI) or Locked-enabled,disabled (ETSI). If the service state is correct, continue with Step 4. If not, complete the following steps:

a. Click the **Admin State** table cell and choose **OOS,MT** (ANSI) or **Locked,Maintenance** (ETSI).

b. Click **Apply**, then **Yes**.

Step 4 Click the **Provisioning > Card** tabs.

Step 5 Change the Card Mode as needed:

- FC-GE—Choose this option if you will provision any of the following PPM port rates: FC1G (Ports 1-1 and 2-1 only), FC2G (Port 1-1 only), FICON1G (Ports 1-1 and 2-1 only), FICON2G (Port 1-1 only), and ONE_GE (Ports 1-1 through 8-1).
- Mixed—Choose this option if you will provision any of the following PPM port rates: FC1G and ONE_GE (Port 1–1 only), ESCON (Ports 5–1 through 8-1 only)
- ESCON—Choose this option if you will provision the ESCON PPM on Ports 1-1 through 8-1.

Note The Provisioning > Card tab also has the display-only Tunable Wavelengths field. This field shows the supported wavelengths of the trunk port after the card is installed in the format: *first wavelength-last wavelength-frequency spacing-number of supported wavelengths*. For example, 1529.55nm-1561.83nm-50gHz-82.

Step 6 Click **Apply**.

Step 7 Return to your originating procedure (NTP).

DLP-G332 Change the 10G Data Muxponder Port Mode

Purpose	This task changes the port mode for the MXP_MR_10DME_C and MXP_MR_10DME_L muxponder cards. The port mode determines which PPMs can be provisioned on the ports.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note The MXP_MR_10DME_C and MXP_MR_10DME_L cards have two port mode groups, one for Ports 1 through 4, and the second for Ports 5 through 8. To change the port mode, all ports within the selected port group must have an OOS (out-of-service) service state. Ports in the second port group do not need to have an OOS service state if you are not changing the port mode for the second port group.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_10DME_C or MXP_MR_10DME_L card where you want to change the port mode.

Step 2 Click the **Provisioning > Card** tabs.

Step 3 Change the port mode as described in Table 5-1.

Note The PPM port rates are provisioned in the "DLP-G277 Provision a Multirate PPM" task on page 5-8.

Table 5-1 10G Data Muxponder Card Port Modes

Parameter	Description	Options
Port 1-4 Mode	Sets the mode of operation for Ports 1-1 through 4-1.	Chose one of the following: • FC-GE_ISC—Choose this option if you will provision any of the following PPM port rates: FC1G (Ports 1-1 through 4-1), FC2G (Ports 1-1 and 3-1 only), FICON1G (Ports 1-1 through 4-1), FICON2G (Ports 1-1 and 3-1 only), ONE_GE (Ports 1-1 through 4-1), ISC3 COMPAT (Ports 1-1 through 4-1), ISC3 PEER 1G (Ports 1-1 through 4-1), and ISC3 PEER 2G (Ports 1-1 and 3-1 only). • FC4G—Choose this option if you will provision an FC4G or FICON4G PPM (Port 1-1 only).
Port 5-8 Mode	Sets the mode of operation for Ports 5-1 through 8-1.	Chose one of the following: • FC-GE_ISC—choose this option if you will provision any of the following PPM port rates: FC1G (Ports 5-1 through 8-1), FC2G (Ports 5-1 and 7-1 only), FICON1G (Ports 5-1 through 8-1), FICON2G (Ports 5-1 and 7-1 only), ONE_GE (Ports 5-1 through 8-1), ISC3 COMPAT (Ports 5-1 through 8-1), ISC3 PEER 1G (Ports 5-1 through 8-1), and ISC3 PEER 2G (Ports 5-1 and 7-1 only). • FC4G—choose this option if you will provision an FC4G or FICON4G PPM port rate (Port 5-1 only).

Note The Provisioning > Cards tab also has a display-only Tunable Wavelengths field which shows the wavelengths supported by the card. If a MXP_MR_10DME_C card is installed, the 32 C-band wavelengths appear. If the MXP_MR_10DME_L card is installed, the 32 L-band wavelengths appear.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

Note Loopbacks on MXP-MR-10DME are not applicable when Fiber Channel switches are present.

Note If the Fiber Channel switch version is not present then the Distance Extension settings are not supported.

DLP-G379 Change the GE_XP or 10GE_XP Card Mode

Purpose	This task changes the 10GE_XP or GE_XP card mode. 10GE_XP cards can be provisioned as a Layer 2 Ethernet switch or a 10G Ethernet TXP. GE_XP cards can be provisioned as a Layer 2 Ethernet switch, 10G Ethernet MXP, or 20G Ethernet MXP.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the 10GE_XP or GE_XP card where you want to change the card mode.

Step 2 In card view, click the **Provisioning > Ether Ports > Ports**.

Step 3 Verify that any provisioned client or trunk ports have an OOS-MA,DSBLD (ANSI) or Locked-enabled,disabled (ETSI) service state in the Service State column. If so, continue with Step 4. If not, complete the following substeps.

- **a.** For the first port that is not out of service, in the Admin State column, choose **OOS,DSBLD** (ANSI) or **Locked,disabled** (ETSI).
- **b.** Repeat Step a for each port that is not out of service.
- **c.** Click **Apply**.

Step 4 Click the **Provisioning > Card** tabs.

Step 5 Choose one of the card modes shown in Table 5-2.

:

Table 5-2 GE_XP and 10GE_XP Card Modes

Mode	Cards	Description
L2 over DWDM	GE_XP 10GE_XP	Provisions the GE_XP or 10GE_XP as a Layer 2 switch.
10GE TXP	10GE_XP	Provisions the 10GE_XP as a 10GE transponder. Traffic received on the 10GE client Port 1-1 is sent to 10GE trunk Port 3-1, and traffic received on 10GE client Port 2-1 is sent to 10GE trunk Port 4-1.

Table 5-2 GE_XP and 10GE_XP Card Modes

Mode	Cards	Description
10GE MXP	GE_XP	Provisions the GE_XP as a 10GE muxponder. Traffic received on GE client Ports 1-1 through 10-1 is multiplexed and sent to 10GE trunk Port 21-1, and traffic received on GE client Ports 11-1 through 20-1 is multiplexed and sent to 10GE trunk Port 22-1.
20GE MXP	GE_XP	Provisions the GE_XP as a 20GE muxponder. Traffic received on GE client Ports 1-1 through 20-1 is multiplexed and sent to 10GE trunk Port 21-1. Trunk port 22-1 is not used.

The GE-XP card operating in 10GE MXP mode and configured for 100% traffic flow, do not drop frames when up to nine ports are in use. However, when all the ten ports are in use, some frames are dropped. When the tenth port is to be used, configure the Committed Info Rate (CIR) at 55% on any one of the ports. For more information about configuring the CIR, see the "DLP-G380 Provision the GE_XP and 10GE_XP Ethernet Settings" task on page 5-142.

Step 6 Click **Apply**, then **Yes** on the confirmation dialog.

Step 7 Return to your originating procedure (NTP).

DLP-G411 Provision an ADM-10G PPM and Port

Purpose	This task provisions a fixed-rate PPM and port on an ADM-10G PPM card.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the ADM-10G card where you want to provision PPM settings.

Step 2 Click the **Provisioning > Pluggable Port Modules** tabs.

Step 3 In the Pluggable Port Modules area, click **Create**. The Create PPM dialog box appears.

Step 4 In the Create PPM dialog box, complete the following:

- PPM—Choose the SFP you want to install from the drop-down list.
- PPM Type—Choose the number of ports supported by your SFP from the drop-down list. If only one port is supported, **PPM (1 port)** is the only option.

Step 5 Click **OK**. The newly created port appears in the Pluggable Port Modules area. The row in the Pluggable Port Modules area turns white and the Actual Equipment Type column lists the equipment name.

Step 6 In the Pluggable Ports area, click **Create**. The Create Ports dialog box appears.

Step 7 In the Create Ports dialog box, complete the following:

- Port—Choose the port you want to configure from the drop-down list.

- Port Type—Choose the port type, such as OC-3, OC-12, OC-48, or ONE-GE from the drop-down list.

Step 8 Click **OK**. The newly created port appears in the Pluggable Ports area. The port type you provisioned is listed in the Rate column.

Step 9 If you want to provision a PPM or another port, repeat Steps 4 through 8.

Step 10 Return to your originating procedure (NTP).

DLP-G277 Provision a Multirate PPM

Purpose	This task provisions a multirate PPM on a TXP, MXP, GE_XP, or 10GE_XP card.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note If the PPM was preprovisioned using the "DLP-G273 Preprovision an SFP or XFP Slot" task on page 3-58 this task is unnecessary, unless the PPM has an Out-of-Service and Autonomous Management, Unassigned (OOS-AUMA,UAS) (ANSI) or unlocked-disabled, unassigned (ETSI) service state.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP, MXP, GE_XP, or 10GE_XP card where you want to provision PPM settings.

Step 2 If this is the first PPM provisioned for the TXP, MXP, GE_XP, or 10GE_XP card, complete the following substeps. If a PPM has already been provisioned on the card, continue with Step 3.

a. Click the **Provisioning > Line > SONET** (ANSI) or **SDH** (ETSI) tabs.

b. Locate the Trunk port table row and verify that the Service State column value is OOS-MA,DSBLD (ANSI) or Locked-enabled,disabled (ETSI). If yes, continue with Step 3. If not, continue with Step c.

c. Click the **Admin State** table cell and choose **OOS,MT** (ANSI) or **Locked,Maintenance** (ETSI).

d. Click **Apply**, then **Yes**.

Step 3 Click the **Provisioning > Pluggable Port Modules** tabs.

Step 4 In the Pluggable Port Modules area, click **Create**. The Create PPM dialog box appears.

Step 5 In the Create PPM dialog box, complete the following:

- PPM—Choose the slot number where the SFP is installed from the drop-down list.
- PPM Type—Choose the number of ports supported by your SFP from the drop-down list. If only one port is supported, **PPM (1 port)** is the only option.

Step 6 Click **OK**. The newly created port appears in the Pluggable Port Modules area. The row in the Pluggable Port Modules area turns white and the Actual Equipment Type column lists the equipment name.

Step 7 If you want to provision a PPM on another port, repeat Steps 4 through 6. If not, continue with Step 8.

Step 8 Return to your originating procedure (NTP).

DLP-G274 Verify Topologies for ETR_CLO and ISC Services

Purpose	This task verifies that the DWDM network topology can support the IBM ETR_CLO and ISC services.
Tools/Equipment	Cisco MetroPlanner site plan
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Display your site plan in Cisco MetroPlanner.

Step 2 Verify that the topology where you plan to run the ETR_CLO or ISC service can support the service. The following topologies support ETR_CLO or ISC:

- Single span—Two terminal sites with no intermediate sites in between and one of the following sets of cards installed:
  - 32MUX-O and 32DMX-O cards
  - 32WSS and 32DMX cards
  - 32WSS and 32-DMX-O cards
  - 40-MUX-C and 40-DMX-C cards
  - 40-WSS-C and 40-DMX-C cards

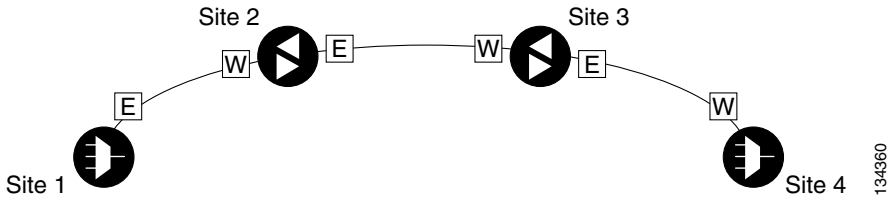
  Figure 5-1 shows a single-span topology as displayed in Cisco MetroPlanner.

Figure 5-1 Single-Span Topology

- Point-to-Point—Two terminal sites with one of the following sets of cards installed:
  - 32MUX-O and 32DMX-O cards
  - 32WSS and 32DMX cards
  - 32WSS and 32-DMX-O cards
  - 40-MUX-C and 40-DMX-C cards
  - 40-WSS-C and 40-DMX-C cards

Line amplifiers can be installed between the terminal sites, but intermediate (traffic terminating) sites cannot be installed. Figure 5-2 shows a point-to-point topology as shown in Cisco MetroPlanner.

Figure 5-2 Point-to-Point Topology



- Two hubs—Two hub nodes in a ring with one of the following sets of cards installed:
  - 32MUX-O and 32DMX-O cards
  - 32WSS and 32DMX cards
  - 32WSS and 32-DMX-O cards
  - 40-MUX-C and 40-DMX-C cards
  - 40-WSS-C and 40-DMX-C cards

  Line amplifiers can be installed between the hubs. Figure 5-3 shows two hub nodes with no line amplifier nodes installed. Figure 5-4 shows two hub nodes with line amplifier nodes installed.

Figure 5-3 Hubs with No Line Amplifiers

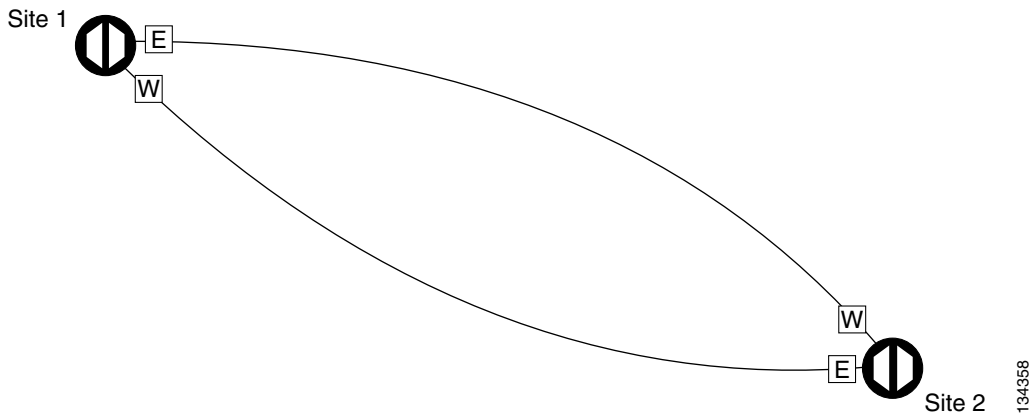
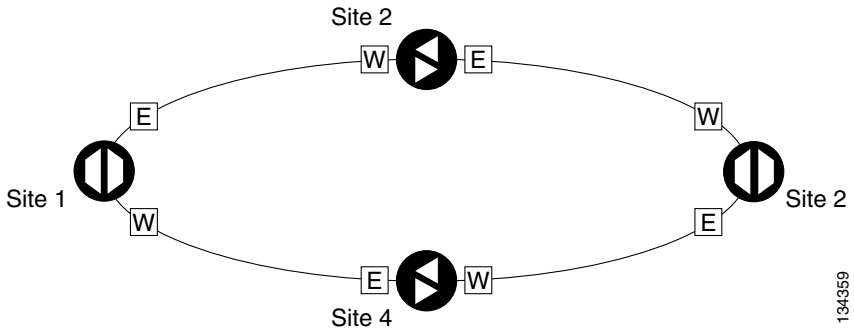


Figure 5-4 Hubs with Line Amplifiers



Step 3 Return to your originating procedure (NTP).

DLP-G278 Provision the Optical Line Rate

Purpose	This task provisions the line rate for TXP, MXP, GE_XP, and 10GE_XP cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27 DLP-G277 Provision a Multirate PPM, page 5-8 DLP-G274 Verify Topologies for ETR_CLO and ISC Services, page 5-9, if you are provisioning an ETR_CLO service.
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note The optical line rate for cards with single-rate PPMs is provisioned automatically when you complete the "DLP-G277 Provision a Multirate PPM" task on page 5-8 if the trunk port is out of service. If the optical line rate was provisioned automatically, you do not need to complete this task for the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, MXP_2.5G_10E_L, GE_XP, or 10GE_XP cards. If the trunk port was in-service when you provisioned the PPM, complete this task to provision the optical line rate manually for those cards.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP, MXP, GE_XP, or 10GE_XP card where you want to provision PPM ports. If the data rate that you are provisioning is DV-6000, HDTV, ESCON, SDI/D1 Video, ISC-3 (all cards except the MXP_MR_10DME_C or MXP_MR_10DME_L), or ETR_CLO, complete the following steps. Otherwise, continue with Step 2.

a. Click the **Provisioning > OTN > OTN Lines** tabs.

b. In the G.709 OTN field, choose **Disable**.

c. In the FEC field, choose **Disable**.

d. Click **Apply**.

Step 2 Click the **Provisioning > Pluggable Port Modules** tabs.

Step 3 In the Pluggable Ports area, click **Create**. The Create Port dialog box appears.

Step 4 In the Create Port dialog box, complete the following:

- Port—Choose the port and port number from the drop-down list. The first number indicates the PPM in the Pluggable Port Modules area, and the second number indicates the port number on the PPM. For example, the first PPM with one port appears as 1-1 and the second PPM with one port appears as 2-1. The PPM number can be 1 to 4, but the port number is always 1.
- Port Type—Choose the type of port from the drop-down list. The port type list displays the supported port rates on your PPM. See Table 5-3 on page 5-12 for definitions of the supported rates on the TXP, MXP, GE_XP, or 10GE_XP card.

Step 5 Click **OK**. The row in the Pluggable Ports area turns white if the physical SFP is installed and light blue if the SFP is not installed.
If the optical parameter values differ from the NE Default settings, change the port state to In-Service (for ANSI) or Unlocked (for ETSI) to synchronize the values with the NE Default settings.

Step 6 Repeat Steps 3 through 5 to configure the rest of the port rates as needed.

Table 5-3 PPM Port Types

Card	Port Type
TXP_MR_2.5G TXPP_MR_2.5G	• OC-3/STM1—155 Mbps • OC-12/STM4—622 Mbps • OC-48/STM16—2.48 Gbps • ONE_GE—One Gigabit Ethernet 1.125 Gbps • ESCON—Enterprise System Connection 200 Mbps (IBM signal) • DV6000—Proprietary signal from video vendor • SDI_D1_VIDEO—Serial Digital Interface and Digital Video signal type 1 • HDTV—High Definition Television • PASS-THRU—Not specified • FC1G—Fibre Channel 1.06 Gbps • FC2G—Fibre Channel 2.125 Gbps • FICON1G—Fiber connectivity1.06 Gbps (IBM signal) • FICON2G—Fiber connectivity 2.125 Gbps (IBM signal) • ETR_CLO—External Time Reference–Control Link Oscillator • ISC compat—InterSystem Coupling Link 1 (ISC1) • ISC peer—InterSystem Coupling Link 3 (ISC3)
MXP_2.5G_10G MXP_2.5G_10E MXP_2.5G_10E_C MXP_2.5G_10E_L	• OC-48/STM16—2.48 Gbps[1]

Table 5-3 PPM Port Types (continued)

Card	Port Type
TXP_MR_10G[2]	• SONET (OC-192)/SDH (STM-64) including 10G Ethernet WAN Phy • 10G Ethernet LAN Phy
TXP_MR_10E TXP_MR_10E_C TXP_MR_10E_L	• SONET (OC-192)/SDH (STM-64) including 10G Ethernet WAN Phy—10 Gbps • 10G Ethernet LAN Phy—10 Gbps Ethernet • 10G Fibre Channel—10 Gbps Fibre Channel
MXP_MR_2.5G MXPP_MR_2.5G	If the card mode is FC_GE: • FC1G ISL—Fibre Channel 1.06 Gbps (Ports 1-1 and 2-1) • FC2G ISL—Fibre Channel 2.125 Gbps (Port 1-1 only) • FICON1G ISL—Fiber connectivity 1.06 Gbps (IBM signal) (Ports 1-1 and 2-1) • FICON2G ISL—Fiber connectivity 2.125 Gbps (IBM signal) (Port 1-1 only) • ONE_GE—One Gigabit Ethernet 1.125 Gbps (Ports 1-1 and 2-1 only) If the card mode is Mixed: • FC1G ISL—Fibre Channel 1.06 Gbps (Port 1-1 only) • FICON1G ISL—Fiber connectivity 1.06 Gbps (IBM signal) (Port1-1 only) • ONE_GE—One Gigabit Ethernet 1.125 Gbps (Port 1-1 only) • ESCON—Enterprise System Connection 200 Mbps (IBM signal) (Ports 5-1 through 8-1) If the card mode is ESCON: • ESCON—Enterprise System Connection 200 Mbps (IBM signal) (Ports 1-1 through 8-1)

Table 5-3 PPM Port Types (continued)

Card	Port Type
MXP_MR_10DME_C MXP_MR_10DME_L	If the port mode is FC_GE_ISC: • FC1G—Fibre Channel 1.06 Gbps (Ports 1-1 through 8-1) • FC2G—Fibre Channel 2.125 Gbps (Ports 1-1, 3-1, 5-1, and 7-1 only; ports are not available if the port that follows—2-1, 4-1, 6-1, or 8-1—has a PPM provisioned.) • FICON1G—Fiber connectivity 1.06 Gbps (IBM signal) (Ports 1-1 through 8-1) • FICON2G—Fiber connectivity 2.125 Gbps (IBM signal) (Ports 1-1, 3-1, 5-1, and 7-1 only; ports are not available if the port that follows—2-1, 4-1, 6-1, or 8-1—has a PPM provisioned.) • ONE_GE—One Gigabit Ethernet 1.125 Gbps (Ports 1-1 through 8-1) • ISC COMPAT (Ports 1-1 through 8-1) • ISC3 PEER 1G (Ports 1-1 through 8-1) • ISC3 PEER 2G (Ports 1-1, 3-1, 5-1, and 7-1 only; ports are not available if the port that follows—2-1, 4-1, 6-1, or 8-1—has a PPM provisioned.) If the port mode is FC4G: • FC4G—Fibre Channel 4.25 Gbps (Ports 1-1 or 5-1 only; ports are not available if any of the three ports that follow has a PPM provisioned.) • FICON4G—Fiber connectivity 4.25 Gbps (IBM signal) (Ports 1-1 or 5-1 only; ports are not available if any of the three ports that follow has a PPM provisioned.)
GE_XP 10GE_XP	• GE (GE_XP client ports)[1] • 10GE (10GE_XP client and trunk ports; GE_XP trunk ports)[1]

1. Automatically provisioned when the PPM is created if the trunk port is out of service.
2. Provisioned on the Data Rate Selection tab.

Step 7 Return to your originating procedure (NTP).

DLP-G280 Delete a PPM

Purpose	This task deletes PPM provisioning for SFPs or XFPs installed on TXP, MXP, GE_XP, 10GE_XP, or ADM-10G cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G63 Install an SFP or XFP, page 3-57 or DLP-G273 Preprovision an SFP or XFP Slot, page 3-58 DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note Before deleting a PPM, delete the PPM from the provisioning pane.

Note This task does not apply to the TXP_MR_10G card. To change the TXP_MR_10G data rate, complete the "DLP-G365 Provision the TXP_MR_10G Data Rate" task on page 5-41.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP, MXP, GE_XP, 10GE_XP, or ADM-10G card where you want to delete PPM settings.

Step 2 Click the **Provisioning > Pluggable Port Modules** tabs.

Step 3 To delete a PPM and the associated ports:

a. In the Pluggable Port Modules area, click the PPM that you want to delete. The highlight changes to dark blue.

b. Click **Delete**. The Delete PPM dialog box appears.

c. Click **Yes**. The PPM provisioning is removed from the Pluggable Port Modules area and the Pluggable Ports area.

Note You cannot delete a client port if the client is in the In Service and Normal (IS-NR) (ANSI) or Unlocked-enabled (ETSI) service state, is in a protection group, has a generic communications channel (GCC) or data communications channel (DCC), is a timing source, has circuits or overhead circuits, or transports Link Management Protocol channels or links. You can delete a client port (except the last port) if the trunk port is in service and the client port is in the OOS-MA,DSBLD (ANSI) or Locked-enabled,disabled (ETSI) service state. You can delete the last client port only if the trunk port is in a OOS-MA,DSBLD (ANSI) or Locked-enabled,disabled (ETSI) service state for all cards except the MXP_MR_2.5G, MXPP_MR_2.5G, MXP_MR_10DME_C, and MXP_MR_10DME_L cards. For more information about port states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.

Step 4 Verify that the PPM provisioning is deleted:

- In the TXP, MXP, GE_XP, 10GE_XP, or ADM-10G card view, CTC shows an empty port after the PPM is deleted.

- If the SFP or XFP is physically present when you delete the PPM provisioning, CTC transitions to the deleted state, the ports (if any) are deleted, and the PPM is represented as a gray graphic in CTC. The SFP or XFP can be provisioned again in CTC, or the equipment can be removed. If the equipment is removed, the graphic disappears.

Step 5 If you need to remove the PPM hardware (the SFP or XFP), complete the "DLP-G64 Remove an SFP or XFP" task on page 3-59.

Step 6 Return to your originating procedure (NTP).

NTP-G33 Create a Y-Cable Protection Group

Purpose	This procedure creates a Y-cable protection group between the client ports of two TXP, MXP, GE_XP, or 10GE_XP cards. For additional information about Y-cable protection, see the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual*.
Tools/Equipment	Installed TXP, MXP, GE_XP, or 10GE_XP cards Cisco MetroPlanner Traffic Matrix
Prerequisite Procedures	NTP-G15 Install the Common Control Cards, page 1-75 NTP-G14 Install DWDM Equipment, page 1-67 DLP-G46 Log into CTC, page 2-27 NTP-G139 Verify Cisco MetroPlanner Reports and Files, page 3-3
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note Y-cable protection is available for the GE_XP and 10GE_XP cards when they are provisioned in 10GE MXP, 20GE MXP, or 10GE TXP mode. Y-cable protection cannot be provisioned for the GE_XP and 10GE_XP cards when they are provisioned in L2 over DWDM mode.

Note If you provisioning Y-cable protection for GE_XP and 10GE_XP cards, the Ethernet mode must be set to 1000 and 10000 Mbps respectively. To provision the Ethernet mode, see the "DLP-G380 Provision the GE_XP and 10GE_XP Ethernet Settings" task on page 5-142.

Note For SONET or SDH payloads, Loss of Pointer Path (LOP-P) alarms can occur on a split signal if the ports are not in a Y-cable protection group.

Step 1 View the Cisco MetroPlanner Traffic Matrix (see Table 3-1 on page 3-3) for your site. Verify the TXP, MXP, GE_XP, or 10GE_XP cards that need Y-cable protection groups. (Cards requiring Y-cable protection are indicated with "Y-Cable" in the Traffic Matrix table Protection Type column. Refer to the *Cisco MetroPlanner DWDM Operations Guide* for more information.)

Step 2 Verify that the TXP, MXP, GE_XP, or 10GE_XP cards are installed according to the requirements specified in Table 3-4 on page 3-88. Table 5-4 lists the protection types available in the ONS 15454 for DWDM client cards.

Table 5-4 Protection Types

Type	Cards	Description and Installation Requirements
Y-cable	MXP_2.5_10G MXP_2.5_10E MXP_2.5_10E_C MXP_2.5_10E_L TXP_MR_10G TXP_MR_10E TXP_MR_10E_C TXP_MR_10E_L TXP_MR_2.5G MXP_MR_2.5G MXP_MR_10DME_C MXP_MR_10DME_L GE_XP[1] 10GE_XP[2]	Pairs a working transponder or muxponder card/port with a protect transponder or muxponder card/port. The protect port must be on a different card than the working port and it must be the same card type as the working port. The working and protect port numbers must be the same, that is, Port 1 can only protect Port 1, Port 2 can only protect Port 2, etc.
Splitter	TXPP_MR_2.5G MXPP_MR_2.5G	A splitter protection group is automatically created when a TXPP_MR_2.5G or MXPP_MR_2.5G card is installed. You can edit the splitter protection group name.

1. When provisioned in 10GE MXP or 20GE MXP card mode.
2. When provisioned in 10GE TXP card mode.

Step 3 Verify that pluggable ports are provisioned for the same payload and payload rate on the TXP, MXP, GE_XP, or 10GE_XP cards where you will create the Y-cable protection group:

- **a.** Display the TXP, MXP, GE_XP, or 10GE_XP card in card view.
- **b.** Click the **Provisioning > Pluggable Port Module** tabs.
- **c.** Verify that a pluggable port is provisioned in the Pluggable Port Module area, and the payload type and rate is provisioned for it in the Pluggable Ports area. If they are not the same, for example, if the pluggable port and rate are not the same, you must either delete the provisioned rate and create a new rate to match using the "DLP-G273 Preprovision an SFP or XFP Slot" task on page 3-58 or replace the pluggable port (SFP or XFP) using the "DLP-G64 Remove an SFP or XFP" task on page 3-59.

Step 4 In node view (single-shelf mode) or shelf view (multishelf view), click the **Provisioning > Protection** tabs.

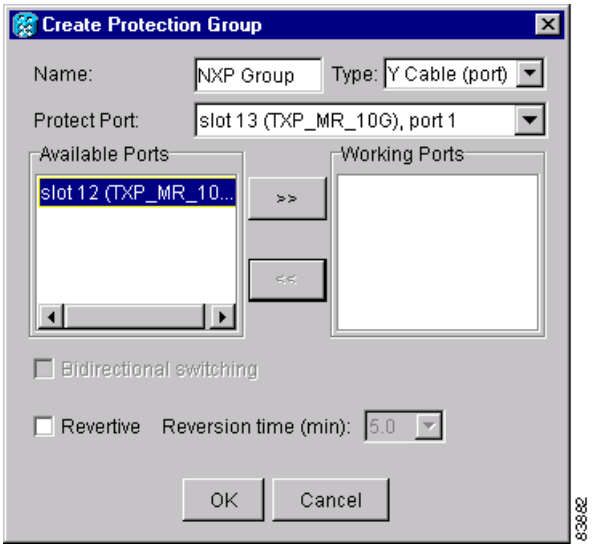
Step 5 In the Protection Groups area, click **Create**.

Step 6 In the Create Protection Group dialog box, enter the following:

- Name—Type a name for the protection group. The name can have up to 32 alphanumeric (a-z, A-Z, 0-9) characters. Special characters are permitted. For TL1 compatibility, do not use question mark (?), backslash (\), or double quote (“) characters.
- Type—Choose **Y Cable** from the drop-down list.
- Protect Port—From the drop-down list, choose the port that will be the standby or protection port to the active port. The list displays the available transponder or muxponder ports. If transponder or muxponder cards are not installed, no ports appear in the drop-down list.

After you choose the protect port, a list of available working ports appear in the Available Ports list, as shown in Figure 5-5. If no cards are available, no ports appear. If this occurs, you can not complete this task until you install the physical cards or preprovision the ONS 15454 slots using the “DLP-G353 Preprovision a Single Slot” task on page 3-47.

Figure 5-5 Creating a Y-Cable Protection Group



Step 7 From the Available Ports list, select the port that will be protected by the port you selected in Protect Ports. Click the top arrow button to move the port to the Working Ports list.

Step 8 Complete the remaining fields:

- Revertive—Check this check box if you want traffic to revert to the working port after failure conditions remain corrected for the amount of time entered in the Reversion Time field.
- Reversion time—If Revertive is checked, select a reversion time from the drop-down list. The range is 0.5 to 12.0 minutes. The default is 5.0 minutes. Reversion time is the amount of time that will elapse before the traffic reverts to the working card. The reversion timer starts after conditions causing the switch are cleared.

Note The Bidirectional switching option is available only for SONET and SDH 1+1 protection groups. It is not available for Y-cable protection groups except for MXP_MR_10DME and MXP_MR_2.5G cards that are provisioned for Fibre Channel with distance extension enabled.

Step 9 Click **OK**.

Step 10 Repeat this procedure for every Y-cable protection group indicated in the Cisco MetroPlanner Traffic Matrix.

Stop. You have completed this procedure.

NTP-G98 Provision the 2.5G Multirate Transponder Card Line Settings and PM Parameter Thresholds

Purpose	This procedure changes the line and threshold settings for TXP_MR_2.5G and TXPP_MR_2.5G transponder cards.
Tools/Equipment	None
Prerequisite Procedures	NTP-G179 Install the TXP, MXP, GE_XP, 10GE_XP, and ADM-10G Cards, page 3-55 DLP-G63 Install an SFP or XFP, page 3-57 DLP-G277 Provision a Multirate PPM, page 5-8 (if necessary) DLP-G278 Provision the Optical Line Rate, page 5-11 (if necessary)
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Complete the "DLP-G46 Log into CTC" task on page 2-27 at the node where you want to change the transponder card settings. If you are already logged in, continue with Step 2.

Step 2 As needed, complete the "NTP-G103 Back Up the Database" procedure on page 13-2 to preserve the existing transmission settings.

Step 3 Perform any of the following tasks as needed:

- DLP-G229 Change the 2.5G Multirate Transponder Card Settings, page 5-20
- DLP-G230 Change the 2.5G Multirate Transponder Line Settings, page 5-22
- DLP-G231 Change the 2.5G Multirate Transponder Line Section Trace Settings, page 5-24
- DLP-G232 Change the 2.5G Multirate Transponder SONET or SDH Line Threshold Settings, page 5-27
- DLP-G320 Change the 2.5G Multirate Transponder Line RMON Thresholds for 1G Ethernet or 1G FC/FICON Payloads, page 5-29
- DLP-G305 Provision the 2.5G Multirate Transponder Trunk Port Alarm and TCA Thresholds, page 5-31
- DLP-G306 Provision the 2.5G Multirate Transponder Client Port Alarm and TCA Thresholds, page 5-32
- DLP-G234 Change the 2.5G Multirate Transponder OTN Settings, page 5-36
- DLP-G367 Change the 2.5G Multirate Transponder Trunk Wavelength Settings, page 5-26

Stop. You have completed this procedure.

DLP-G229 Change the 2.5G Multirate Transponder Card Settings

Purpose	This task changes the card settings for TXP_MR_2.5G and TXPP_MR_2.5G transponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_2.5G or TXPP_MR_2.5G card where you want to change the card settings.

Step 2 Click the **Provisioning > Card** tabs.

Step 3 Modify any of the settings described in Table 5-5.

Note The Card subtab Framing Type and Tunable Wavelengths fields are display-only. Framing Type shows the card framing type, either SONET or SDH, depending on whether the card is installed in an ANSI or ETSI chassis. The Tunable Wavelengths field shows the tunable wavelengths for the physical TXP_MR_2.5G or TXPP_MR_2.5G that is installed.

Table 5-5 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card Settings

Parameter	Description	Options
Termination Mode	Sets the mode of operation (option only supported for SONET/SDH payloads). Refer to the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual* for more details.	• Transparent • Section (ANSI) or Regeneration Section (ETSI) • Line (ANSI) or Multiplex Section (ETSI)
Regeneration Peer Slot	Sets the slot containing another TXP_MR_2.5G or TXPP_MR_2.5G card to create a regeneration peer group. A regeneration peer group facilitates the management of two TXP_MR_2.5G or TXPP_MR_2.5G cards that are needed to perform a complete signal regeneration. The regeneration peer group synchronizes provisioning of the two cards. Payload type and ITU-T G.709 optical transport network (OTN) changes made on one TXP_MR_2.5G or TXPP_MR_2.5G card are reflected on the peer TXP_MR_2.5G or TXPP_MR_2.5G card. **Note** Y-cable protection groups cannot be created on TXP_MR_2.5G or TXPP_MR_2.5G cards that are in a regeneration peer group.	• None • 1 • 2 • 3 • 4 • 5 • 6 • 12 • 13 • 14 • 15 • 16 • 17
Regeneration Group Name	Sets the regeneration peer group name.	User defined

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G230 Change the 2.5G Multirate Transponder Line Settings

Purpose	This task changes the line settings for the client port of the TXP_MR_2.5G and TXPP_MR_2.5G transponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_2.5G or TXPP_MR_2.5G card where you want to change the line settings.

Step 2 Click the **Provisioning > Line >** *Pluggable Port Rate*, where *Pluggable Port Rate* is the pluggable port rate provisioned on the Pluggable Port Modules tab.

Step 3 Modify any of the settings described in Table 5-6.

Note The 2.5G multirate transponder trunk settings are provisioned in the "DLP-G305 Provision the 2.5G Multirate Transponder Trunk Port Alarm and TCA Thresholds" task on page 5-31.

Table 5-6 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card Line Settings

Parameter	Description	Options
Port	(Display only) Displays the port number.	• 1 • 2 (Trunk) • 3 (Trunk) (TXPP_MR_2.5G card only)
Port Name	The user can assign a logical name for each of the ports shown by filling in this field.	User-defined. Name can be up to 32 alphanumeric/ special characters. Blank by default. See the "DLP-G104 Assign a Name to a Port" task on page 7-3.
Admin State	Sets the port service state unless network conditions prevent the change. For more information about administrative states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS (ANSI) or Unlocked (ETSI) • IS,AINS (ANSI) or Unlocked,automaticInService (ETSI) • OOS,DSBLD (ANSI) or Locked,disabled (ETSI) • OOS,MT (ANSI) or Locked,maintenance (ETSI)

Table 5-6 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card Line Settings (continued)

Parameter	Description	Options
Service State	(Display only) Identifies the autonomously generated state that gives the overall condition of the port. Service states appear in the format: Primary State-Primary State Qualifier, Secondary State. For more information about service states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS-NR (ANSI) or Unlocked-enabled (ETSI) • OOS-AU,AINS (ANSI) or Unlocked-disabled, automaticInService (ETSI) • OOS-MA,DSBLD (ANSI) or Locked-enabled,disabled (ETSI) • OOS-MA,MT (ANSI) or Locked-enabled,maintenance (ETSI)
SF BER	(OC-N and STM-N payloads only) Sets the signal fail bit error rate.	• 1E-3 • 1E-4 • 1E-5
SD BER	(OC-N and STM-N payloads only) Sets the signal degrade bit error rate.	• 1E-5 • 1E-6 • 1E-7 • 1E-8 • 1E-9
ALS Mode	Sets the automatic laser shutdown (ALS) function.	• Disabled (default) • Auto Restart • Manual Restart • Manual Restart for Test
Reach	Displays the optical reach distance of the client port.	Options: ANSI/ETSI • Autoprovision/Autoprovision (default) • SR • SR 1/I-1—Short reach up to 2-km distance • IR 1/S1—Intermediate reach, up to 15-km distance • IR 2/S2—Intermediate reach up to 40-km distance • LR 1/L1—long reach, up to 40-km distance • LR 2/L2—long reach, up to 80-km distance • LR 3/L3—long reach, up to 80-km distance
Wavelength	Displays the wavelength of the client port.	• First Tunable Wavelength • Further wavelengths: 1310 nm through 1560.61 nm, 100-GHz ITU spacing; coarse wavelength division multiplexing (CWDM) spacing Note: supported wavelengths are marked by asterisks (**)

Table 5-6 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card Line Settings (continued)

Parameter	Description	Options
AINS Soak	(OC-N and STM-N payloads only) Sets the automatic in-service soak period.	• Duration of valid input signal, in hh.mm format, after which the card becomes in service (IS) automatically • 0 to 48 hours, 15-minute increments
Type	(OC-N and STM-N payloads only) The optical transport type.	• SONET • SDH

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G231 Change the 2.5G Multirate Transponder Line Section Trace Settings

Purpose	This task changes the section trace settings for TXP_MR_2.5G and TXPP_MR_2.5G transponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note This task only applies to SONET services.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_2.5G or TXPP_MR_2.5G card where you want to change the section trace settings.

Step 2 Click the **Provisioning > Line > Section Trace** tabs.

Step 3 Modify any of the settings described in Table 5-7.

Table 5-7 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card Section Trace Settings

Parameter	Description	Options
Port	(Display only) Port number.	• 1 • 2 (Trunk) • 3 (Trunk) (TXPP_MR_2.5G only)
Received Trace Mode	Sets the trace mode.	• Off/None • Manual

Table 5-7 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card Section Trace Settings

Parameter	Description	Options
Disable AIS/RDI on TIM-S	If an TIM on Section overhead alarm arises because of a J0 overhead string mismatch, no alarm indication signal is sent to downstream nodes if this box is checked.	• Checked (AIS/RDI on TIM-S is disabled) • Unchecked (AIS/RDI on TIM-S is not disabled)
Transmit Section Trace String Size	Sets the trace string size.	• 1 byte • 16 byte
Transmit	Displays the current transmit string; sets a new transmit string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Expected	Displays the current expected string; sets a new expected string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Received	(Display only) Displays the current received string. You can click Refresh to manually refresh this display, or check the Auto-refresh every 5 sec check box to keep this display updated automatically.	String of trace string size
Auto-refresh	If checked, automatically refreshes the display every 5 seconds.	Checked/unchecked (default)

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G367 Change the 2.5G Multirate Transponder Trunk Wavelength Settings

Purpose	This task changes the trunk wavelength settings for the TXP_MR_2.5G and TXPP_MR_2.5G cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_2.5G or TXPP_MR_2.5G card where you want to change the trunk wavelength settings.

Step 2 Click the **Provisioning > Line > Wavelength Trunk Settings** tabs.

Step 3 Modify any of the settings as described in Table 5-8.

Table 5-8 TXP_MR_2.5G and TXPP_MR_2.5G Card Wavelength Trunk Settings

Parameter	Description	Options
Port	(Display only) Displays the port number.	• 2 (Trunk) • 3 (Trunk) (TXPP_MR_2.5G only)
Band	(Display only) Indicates the wavelength band that can be provisioned.	C—Only the C band is available
Even/Odd	Sets the wavelengths available for provisioning. This field does not apply to TXP_MR_2.5G or TXPP_MR_2.5G cards	—
Wavelength	The wavelength provisioned for the trunk.	• First Tunable Wavelength • Further wavelengths in 100-GHz ITU-T, C-band spacing. If the card is installed, the wavelengths it carries are identified with two asterisks. Other wavelengths have a dark grey background. If the card is not installed, all wavelengths appear with a dark grey background.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G232 Change the 2.5G Multirate Transponder SONET or SDH Line Threshold Settings

Purpose	This task changes the line threshold settings for TXP_MR_2.5G and TXPP_MR_2.5G transponder cards carrying OC-3/STM-1, OC-12/STM-4, and OC-48/STM-16 payloads.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_2.5G or TXPP_MR_2.5G card where you want to change the line threshold settings.

Step 2 Click the **Provisioning > Line Thresholds** tabs.

Note You must modify Near End and Far End independently; 15 Min and 1 Day independently; and Line and Section independently. To do so, choose the appropriate radio button and click **Refresh**.

Step 3 Modify any of the settings in Table 5-9.

Note Some parameters and options in Table 5-9 do not apply to all TXP_MR_2.5G or TXPP_MR_2.5G cards. If a parameter or option does not apply, that parameter or option does not appear in CTC.

Table 5-9 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card Line Thresholds Settings for OC-3/STM-1, OC-12/STM-4, and OC-48/STM-16 Payloads

Parameter	Description	Options - ANSI	Options - ETSI
Port	(Display only) Port number	• 1 • 2 (Trunk) • 3 (Trunk) (TXPP_MR_2.5G only)	• 1 • 2 (Trunk) • 3 (Trunk) (TXPP_MR_2.5G only)
EB	Path Errored Block indicates that one or more bits are in error within a block	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.

Table 5-9 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card Line Thresholds Settings for OC-3/STM-1, OC-12/STM-4, and OC-48/STM-16 Payloads (continued)

Parameter	Description	Options - ANSI	Options - ETSI
CV	Coding violations	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
ES	Errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
SES	Severely errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
FC	(Line or Multiplex Section only) Failure count	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.

Table 5-9 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card Line Thresholds Settings for OC-3/STM-1, OC-12/STM-4, and OC-48/STM-16 Payloads (continued)

Parameter	Description	Options - ANSI	Options - ETSI
SEFS	(Near End Section or Regeneration Section only) Severely errored framing seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G320 Change the 2.5G Multirate Transponder Line RMON Thresholds for 1G Ethernet or 1G FC/FICON Payloads

Purpose	This task changes the line remote monitoring (RMON) threshold settings for TXP_MR_2.5G and TXPP_MR_2.5G transponder cards carrying the 1G Ethernet or 1G FC/FICON payloads.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In card view, display the TXP_MR_2.5G or TXPP_MR_2.5G card where you want to change the line threshold settings.

Step 2 Click the **Provisioning > Line Thresholds > RMON Thresholds** tabs.

Step 3 Click **Create**. The Create Threshold dialog box appears.

Step 4 From the Port drop-down list, choose the applicable port.

Step 5 From the Variable drop-down list, choose an Ethernet variable. See Table 5-10 for a list of available Ethernet variables.

Table 5-10 TXP_MR_2.5G and TXPP_MR_2.5G Card 1G Ethernet and 1G FC/FICON Thresholds

Variable	Description
ifInErrors	Number of inbound packets that contained errors preventing them from being delivered to a higher-layer protocol.

Table 5-10 TXP_MR_2.5G and TXPP_MR_2.5G Card 1G Ethernet and 1G FC/FICON Thresholds (continued)

rxTotalPkts	Total number of received packets.
8b10bStatsEncodingDispErrors	Number of IETF 8b10b disparity violations on the Fibre Channel line side.
8b10bIdleOrderedSets	Number of received packets containing idle ordered sets.
8b10bNonIdleOrderedSets	Number of received packets containing non-idle ordered sets.
8b10bDataOrderedSets	Number of received packets containing data ordered sets.

Step 6 From the Alarm Type drop-down list, indicate whether the event will be triggered by the rising threshold, the falling threshold, or both the rising and falling thresholds.

Step 7 From the Sample Type drop-down list, choose either **Relative** or **Absolute**. Relative restricts the threshold to use the number of occurrences in the user-set sample period. Absolute sets the threshold to use the total number of occurrences, regardless of time period.

Step 8 Enter the appropriate number of seconds for the Sample Period.

Step 9 Enter the appropriate number of occurrences for the Rising Threshold.

For a rising type of alarm, the measured value must move from below the falling threshold to above the rising threshold. For example, if a network is running below a rising threshold of 1000 collisions every 15 seconds and a problem causes 1001 collisions in 15 seconds, the excess occurrences trigger an alarm.

Step 10 Enter the appropriate number of occurrences in the Falling Threshold field. In most cases a falling threshold is set lower than the rising threshold.

A falling threshold is the counterpart to a rising threshold. When the number of occurrences is above the rising threshold and then drops below a falling threshold, it resets the rising threshold. For example, when the network problem that caused 1001 collisions in 15 seconds subsides and creates only 799 collisions in 15 seconds, occurrences fall below a falling threshold of 800 collisions. This resets the rising threshold so that if network collisions again spike over a 1000 per 15-second period, an event again triggers when the rising threshold is crossed. An event is triggered only the first time a rising threshold is exceeded (otherwise, a single network problem might cause a rising threshold to be exceeded multiple times and cause a flood of events).

Step 11 Click **OK**.

Step 12 Return to your originating procedure (NTP).

DLP-G305 Provision the 2.5G Multirate Transponder Trunk Port Alarm and TCA Thresholds

Purpose	This task changes the TXP_MR_2.5G and TXPP_MR_2.5G trunk port alarm and threshold crossing alert (TCA) thresholds.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note In this task, trunk port refers to Port 2 for TXP_MR_2.5G cards, and to Ports 2 and 3 for TXPP_MR_2.5G cards.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_2.5G or TXPP_MR_2.5G card where you want to change the trunk port alarm and TCA settings.

Step 2 Click the **Pluggable Port Modules** tab. Under Pluggable Ports, record the Rate that is provisioned.

Step 3 Look up the rate in Table 5-11 and note whether it is 2R or 3R.

Table 5-11 2R and 3R Mode and ITU-T G.709 Compliance by Client Interface

Client Interface	Input Bit Rate	3R vs. 2R	ITU-T G.709
OC-48/STM-16	2.488 Gbps	3R	On or Off
DV-6000	2.38 Gbps	2R	—
2 Gigabit Fibre Channel (2G-FC)/fiber connectivity (FICON)	2.125 Gbps	3R[1]	On or Off
High-Definition Television (HDTV)	1.48 Gbps	2R	—
Gigabit Ethernet (GE)	1.25 Gbps	3R	On or Off
1 Gigabit Fibre Channel (1G-FC)/FICON	1.06 Gbps	3R	On or Off
OC-12/STM-4	622 Mbps	3R	On or Off
OC-3/STM-1	155 Mbps	3R	On or Off
Enterprise System Connection (ESCON)	200 Mbps	2R	—
SDI/D1 video	270 Mbps	2R	—
ISC-1 Compact	1.06 Gbps	3R	Off
ISC-3	1.06 or 2.125 Gbps	2R	—
ETR_CLO	16 Mbps	2R	—

1. No monitoring

Step 4 Click the **Provisioning > Optics Thresholds** tabs.

Step 5 Click the **15 Min** performance monitoring (PM) interval radio button and click **Refresh**.

Step 6 Referring to Table 5-12, provision the trunk port TCA thresholds for RX Power High and RX Power Low depending on whether the rate is 2R or 3R.

Note Do not modify the Laser Bias parameters.

Table 5-12 TXP_MR_2.5G and TXPP_MR_2.5G Trunk Port TCA Thresholds

Signal	TCA RX Power Low	TCA RX Power High
3R	–23 dBm	–9 dBm
2R	–24 dBm	–9 dBm

Step 7 Click **Apply**.

Step 8 Under Types, click the **Alarm** radio button and click **Refresh**.

Step 9 Provision the trunk port Alarm thresholds for RX Power High to –7 dBm, and for RX Power Low to –26 dBm.

Step 10 Click **Apply**.

Step 11 Under Types, click **TCA**, then click the **1 Day** interval. Click **Refresh**, then repeat Steps 6 through 10 for the 1-day interval. If you have completed both intervals, continue with Step 12.

Step 12 Return to your originating procedure (NTP).

DLP-G306 Provision the 2.5G Multirate Transponder Client Port Alarm and TCA Thresholds

Purpose	This task provisions the client port alarm and TCA thresholds for the TXP_MR_2.5G and TXPP_MR_2.5G cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G278 Provision the Optical Line Rate, page 5-11 DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_2.5G or TXPP_MR_2.5G card where you want to change the client port alarm and TCA settings.

Step 2 Click the **Provisioning > Optics Thresholds** tabs. The TCA thresholds are shown by default.

Step 3 Referring to Table 5-13, provision the Port 1 (client) TCA thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low based on the client interface at the other end.

Note Do not modify the Laser Bias parameters.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Note The hardware device that plugs into a TXP, MXP, GE_XP, 10GE_XP, or ADM-10G card faceplate to provide a fiber interface to the card is called a Small Form-factor Pluggable (SFP or XFP). In CTC, SFPs and XFPs are called pluggable port modules (PPMs). SFPs/XFPs are hot-swappable input/output devices that plug into a port to link the port with the fiber-optic network. Multirate PPMs have provisionable port rates and payloads. For more information about SFPs and XFPs, refer to the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual.*

Table 5-13 TXP_MR_2.5G and TXPP_MR_2.5G Card Client Interface TCA Thresholds

Port Type (by CTC)	Pluggable Port Module (SFP)	TCA RX Power Low	TCA RX Power High	TCA TX Power Low	TCA TX Power High
OC-3	15454-SFP3-1-IR	–23	–8	–21	–2
STM-1	15454E-SFP-L.1.1	–24	–10	–21	–2
OC-12	15454-SFP12-4-IR	–28	–7	–21	–2
STM-4	15454E-SFP-L.4.1	–28	–8	–21	–2
OC-48	ONS-SE-2G-S1	–18	–3	–16	3
	15454-SFP-OC48-IR	–18	0	–11	6
STM-16	ONS-SE-2G-S1	–18	–3	–16	3
	15454E-SFP-L.16.1	–18	0	–11	6
ONE_GE	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–17	0	–16	3
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–20	–3	–16	3
ESCON	15454-SFP-200 15454E-SFP-200 ONS-SE-200-MM	–21	–14	–35	–8
DV6000	15454-SFP-OC48-IR	–28	–7	–21	–2
	15454E-SFP-L.16.1	–18	0	–11	6
SDI_D1_ VIDEO	15454-SFP12-4-IR	–28	–7	–21	–2
	15454E-SFP-L.4.1	–28	–8	–21	–2
HDTV	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–20	–3	–16	3
PASS-THRU	2R MODE (not specified)	—	—	—	—

Table 5-13 TXP_MR_2.5G and TXPP_MR_2.5G Card Client Interface TCA Thresholds (continued)

Port Type (by CTC)	Pluggable Port Module (SFP)	TCA RX Power Low	TCA RX Power High	TCA TX Power Low	TCA TX Power High
FC1G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–17	0	–16	3
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–20	–3	–16	3
FC2G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–15	0	–16	3
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–20	–3	–16	3
FICON1G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–17	0	–16	3
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–20	–3	–16	3
FICON2G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–17	0	–16	3
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–20	–3	–16	3
ETR_CLO	15454-SFP-200 15454E-SFP-200 ONS-SE-200-MM	–17	0	–16	3
ISC compat	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–20	–3	–16	3
ISC peer	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–20	–3	–16	3

Step 4 Click **Apply**.

Step 5 Under Types, click the **Alarm** radio button and click **Refresh**.

Step 6 Referring to Table 5-14, provision the Alarm thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low based on the client interface that is provisioned.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Table 5-14 TXP_MR_2.5G and TXPP_MR_2.5G Card Client Interface Alarm Thresholds

Port Type (by CTC)	Pluggable Port Module (SFP)	Alarm RX Power Low	Alarm RX Power High	Alarm TX Power Low	Alarm TX Power High
OC-3	15454-SFP3-1-IR	–26	–5	–18	–5
STM-1	15454E-SFP-L.1.1	–27	–7	–18	–5
OC-12	15454-SFP12-4-IR	–31	–4	–18	–5
STM-4	15454E-SFP-L.4.1	–31	–5	–18	–5
OC-48	ONS-SE-2G-S1	–21	0	–13	0
	15454-SFP-OC48-IR	–21	3	–8	3
STM-16	ONS-SE-2G-S1	–21	0	–13	0
	15454E-SFP-L.16.1	–21	3	–8	3
ONE_GE	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–20	3	–13	–1
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
ESCON	15454-SFP-200 15454E-SFP-200 ONS-SE-200-MM	–24	–11	–32	–11
DV6000	15454-SFP-OC48-IR	–31	–4	–18	–5
	15454E-SFP-L.16.1	–21	3	–8	3
SDI_D1_ VIDEO	15454-SFP12-4-IR	–31	–4	–18	–5
	15454E-SFP-L.4.1	–31	–5	–18	–5
HDTV	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
PASS-THRU	2R MODE (not specified)	—	—	—	—
FC1G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–20	3	–13	–1
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
FC2G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–18	3	–13	–1
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0

Table 5-14 TXP_MR_2.5G and TXPP_MR_2.5G Card Client Interface Alarm Thresholds (continued)

Port Type (by CTC)	Pluggable Port Module (SFP)	Alarm RX Power Low	Alarm RX Power High	Alarm TX Power Low	Alarm TX Power High
FICON1G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–20	3	–13	–1
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
FICON2G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–20	3	–13	–1
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
ETR_CLO	15454-SFP-200 15454E-SFP-200 ONS-SE-200-MM	–20	3	–13	–1
ISC compat	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
ISC peer	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0

Step 7 Click **Apply**.

Step 8 Return to your originating procedure (NTP).

DLP-G234 Change the 2.5G Multirate Transponder OTN Settings

Purpose	This task changes the OTN settings for TXP_MR_2.5G and TXPP_MR_2.5G transponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_2.5G or TXPP_MR_2.5G card where you want to change the OTN settings.

Step 2 Click the **Provisioning > OTN** tabs, then choose one of the following subtabs: **OTN Lines**, **G.709 Thresholds**, **FEC Thresholds**, or **Trail Trace Identifier**.

Step 3 Modify any of the settings described in Tables 5-15 through 5-18.

Note You must modify Near End and Far End; 15 Min and 1 Day; and SM and PM settings independently. To do so, choose the appropriate radio button and click **Refresh**.

Table 5-15 describes the values on the Provisioning > OTN > OTN Lines tab.

Table 5-15 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card OTN Line Settings

Parameter	Description	Options
Port	(Display only) Displays the port number.	• 2 (Trunk) • 3 (Trunk) (TXPP_MR_2.5G)
G.709 OTN	Sets the OTN lines according to ITU-T G.709.	• Enable • Disable
FEC	Sets the OTN lines to forward error correction (FEC).	• Enable • Disable
SF BER	(Display only) The signal fail bit error rate.	• 1E-5
SD BER	Sets the signal degrade bit error rate.	• 1E-5 • 1E-6 • 1E-7 • 1E-8 • 1E-9

Table 5-16 describes the values on the Provisioning > OTN > G.709 Thresholds tab.

Table 5-16 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card ITU-T G.709 Threshold Settings

Parameter	Description	Options
Port[1]	(Display only) Port number.	• 2 (Trunk) • 3 (Trunk) (TXPP_MR_2.5G)
ES	Errored seconds	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.
SES	Severely errored seconds	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.
UAS	Unavailable seconds	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.

Table 5-16 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card ITU-T G.709 Threshold Settings

Parameter	Description	Options
BBE	Background block errors	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.
FC	Failure counter	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.

1. Latency for a 1G-FC payload without ITU-T G.709 is 4 microseconds, and with ITU-T G.709 is 40 microseconds. Latency for a 2G-FC payload without ITU-T G.709 is 2 microseconds, and with ITU-T G.709 is 20 microseconds. Consider these values when planning a FC network that is sensitive to latency.

Table 5-17 describes the values on the Provisioning > OTN > FEC Threshold tab.

Table 5-17 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card FEC Threshold Settings

Parameter	Description	Options
Port	(Display only) Port number.	• 2 (Trunk) • 3 (Trunk) (TXPP_MR_2.5G)
Bit Errors Corrected	Sets the value for bit errors corrected.	Numeric. Can be set for 15-minute or one-day intervals.
Uncorrectable Words	Sets the value for uncorrectable words.	Numeric. Can be set for 15-minute or one-day intervals.

Table 5-18 describes the values on the Provisioning > OTN > Trail Trace Identifier tab.

Table 5-18 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card Trail Trace Identifier Settings

Parameter	Description	Options
Port	(Display only) Port number.	• 2 (Trunk) • 3 (Trunk) (TXPP_MR_2.5G)
Level	Sets the level.	• Section • Path
Received Trace Mode	Sets the trace mode.	• Off/None • Manual
Disable AIS/RDI on TIM-S	If an TIM on Section overhead alarm arises because of a J0 overhead string mismatch, no alarm indication signal is sent to downstream nodes if this box is checked.	• Checked (AIS/RDI on TIM-S is disabled) • Unchecked (AIS/RDI on TIM-S is not disabled)

Table 5-18 TXP_MR_2.5G and TXPP_MR_2.5G Transponder Card Trail Trace Identifier Settings (continued)

Parameter	Description	Options
Transmit	Displays the current transmit string; sets a new transmit string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Expected	Displays the current expected string; sets a new expected string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Received	(Display only) Displays the current received string. You can click Refresh to manually refresh this display, or check the Auto-refresh every 5 sec check box to keep this panel updated.	String of trace string size
Auto-refresh	If checked, automatically refreshes the display every 5 minutes.	Checked/unchecked (default)

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

NTP-G96 Provision the 10G Multirate Transponder Card Line Settings, PM Parameters, and Thresholds

Purpose	This procedure changes the line and threshold settings for 10G multirate transponder cards including the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, and TXP_MR_10E_L cards.
Tools/Equipment	None
Prerequisite Procedures	NTP-G179 Install the TXP, MXP, GE_XP, 10GE_XP, and ADM-10G Cards, page 3-55 DLP-G63 Install an SFP or XFP, page 3-57 DLP-G277 Provision a Multirate PPM, page 5-8 (if necessary) DLP-G278 Provision the Optical Line Rate, page 5-11 (if necessary)
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note The TXP_MR_10G card does not support PPMs.

Step 1 Complete the "DLP-G46 Log into CTC" task on page 2-27 at the node where you want to change the transponder card settings. If you are already logged in, continue with Step 2.

Step 2 As needed, complete the "NTP-G103 Back Up the Database" procedure on page 13-2 to preserve the existing transmission settings.

Step 3 If you are provisioning a TXP_MR_10G card, complete the "DLP-G365 Provision the TXP_MR_10G Data Rate" task on page 5-41. If not, continue with Step 4.

Step 4 Perform any of the following tasks as needed:

- DLP-G216 Change the 10G Multirate Transponder Card Settings, page 5-41
- DLP-G217 Change the 10G Multirate Transponder Line Settings, page 5-43
- DLP-G218 Change the 10G Multirate Transponder Line Section Trace Settings, page 5-46
- DLP-G219 Change the 10G Multirate Transponder Line Thresholds for SONET or SDH Payloads Including 10G Ethernet WAN Phy, page 5-49
- DLP-G319 Change the 10G Multirate Transponder Line RMON Thresholds for 10G Ethernet LAN Phy Payloads, page 5-51
- DLP-G301 Provision the 10G Multirate Transponder Trunk Port Alarm and TCA Thresholds, page 5-54
- DLP-G302 Provision the 10G Multirate Transponder Client Port Alarm and TCA Thresholds, page 5-56
- DLP-G221 Change the 10G Multirate Transponder OTN Settings, page 5-58
- DLP-G368 Change the 10G Multirate Transponder Trunk Wavelength Settings, page 5-48

Stop. You have completed this procedure.

DLP-G365 Provision the TXP_MR_10G Data Rate

Purpose	This task changes the TXP_MR_10G card data rate.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_10G card where you want to change the card data rate settings.

Step 2 Click the **Provisioning > Data Rate Selection** tabs.

Step 3 Click **Create**.

Step 4 In the Create Port dialog box, choose one of the following data rates:

- SONET (ANSI) or SDH (ETSI) (including 10G Ethernet WAN Phy)
- 10G Ethernet LAN Phy

Step 5 Click **Ok**.

Step 6 Return to your originating procedure.

DLP-G216 Change the 10G Multirate Transponder Card Settings

Purpose	This task changes the card settings for the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, and TXP_MR_10E_L cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L card where you want to change the card settings.

Step 2 Click the **Provisioning > Card** tabs.

Step 3 Modify any of the settings described in Table 5-19.

Table 5-19 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Card Settings

Parameter	Description	ONS 15454 Options	ONS 15454 SDH Options
Termination Mode	Sets the mode of operation. (This option is only available for SONET/SDH payloads). Refer to the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual* for more details.	• Transparent • Section (TXP_MR_10E only) • Line	• Transparent • Regeneration Section (TXP_MR_10E only) • Multiplex Section
AIS/Squelch Configuration	(TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L only) Sets the transparent termination mode configuration.	• Squelch • AIS	• Squelch • AIS
Regeneration Peer Slot	Sets the slot containing another TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L card to create a regeneration peer group. A regeneration peer group facilitates the management of two TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L cards that are needed to perform a complete signal regeneration. The regeneration peer group synchronizes provisioning of the two cards. Payload type and ITU-T G.709 optical transport network (OTN) changes made on one TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L card are reflected on the peer TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L card. **Note** Y-cable protection groups cannot be created on TXP cards that are in a regeneration peer group.	• None • 1 • 2 • 3 • 4 • 5 • 6 • 12 • 13 • 14 • 15 • 16 • 17	• None • 1 • 2 • 3 • 4 • 5 • 6 • 12 • 13 • 14 • 15 • 16 • 17
Regeneration Group Name	(Display only) The regeneration peer group name.	—	—
Tunable Wavelengths	(Display only) Shows the supported wavelengths of the trunk port after the card is installed. For the TXP_MR_10E_C, or TXP_MR_10E_L cards, the first and last supported wavelength, frequency spacing, and number of supported wavelengths are shown in the format: *first wavelength-last wavelength-frequency spacing-number of supported wavelengths*. For example, the TXP_MR_10E_C card would show: `1529.55nm-1561.83nm-50gHz-82`. The TXP_MR_10G and TXP_MR_10E show the four wavelengths supported by the card that is installed.	—	—

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G217 Change the 10G Multirate Transponder Line Settings

Purpose	This task changes the line settings for TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, and TXP_MR_10E_L cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L card where you want to change the line settings.

Step 2 Click the **Provisioning > Line > SONET/SDH/Ethernet** tabs. SONET is the option for ANSI shelves when 10G Ethernet WAN phy is the Pluggable Port Rate, SDH is the option for ETSI shelves when 10G Ethernet WAN phy is the Pluggable Port Rate, and Ethernet is the option for ANSI or ETSI shelves when 10GE LAN Phy is the Pluggable Port Rate.

Step 3 Modify any of the settings described in Table 5-20.

Note In Table 5-20, some parameter tabs do not always apply to all 10G multirate transponder cards. If a tab does not apply, it will not appear in CTC.

Table 5-20 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Line Settings

Parameter	Description	ONS 15454 (ANSI) Options	ONS 15454 SDH (ETSI) Options
Port	(Display only) Displays the port number.	• 1 (OC192) (if TXP_MR_10G) • 1 (Client) (if Ethernet LAN is provisioned) • 1-1 (OC192) • 2 (Trunk)	• 1 (STM-64) (if TXP_MR_10G) • 1 (Client) (if Ethernet LAN is provisioned) • 1-1 (STM-64) • 2 (Trunk)
Port Name	Provides the ability to assign the specified port a name.	User-defined. Name can be up to 32 alphanumeric/special characters. Blank by default. See the "DLP-G104 Assign a Name to a Port" task on page 7-3.	User-defined. Name can be up to 32 alphanumeric/special characters. Blank by default. See the "DLP-G104 Assign a Name to a Port" task on page 7-3.

Table 5-20 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Line Settings (continued)

Parameter	Description	ONS 15454 (ANSI) Options	ONS 15454 SDH (ETSI) Options
Admin State	Sets the port service state. For more information about administrative states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS • IS,AINS • OOS,DSBLD • OOS,MT	• Unlocked • Unlocked,automaticInService • Locked,disabled • Locked,maintenance
Service State	(Display only) Identifies the autonomously generated state that gives the overall condition of the port. Service states appear in the format: Primary State-Primary State Qualifier, Secondary State. For more information about service states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS-NR • OOS-AU,AINS • OOS-MA,DSBLD • OOS-MA,MT	• Unlocked-enabled • Unlocked-disabled, automaticInService • Locked-enabled,disabled • Locked-enabled,maintenance
SF BER	(SONET [ANSI] or SDH [ETSI] including 10G Ethernet WAN Phy only) Sets the signal fail bit error rate.	• 1E-3 • 1E-4 • 1E-5	• 1E-3 • 1E-4 • 1E-5
SD BER	(SONET [ANSI] or SDH [ETSI] including 10G Ethernet WAN Phy only) Sets the signal degrade bit error rate.	• 1E-5 • 1E-6 • 1E-7 • 1E-8 • 1E-9	• 1E-5 • 1E-6 • 1E-7 • 1E-8 • 1E-9
Type	(SONET [ANSI] or SDH [ETSI] including 10G Ethernet WAN Phy only) The optical transport type.	• SONET • SDH	• SONET • SDH

Table 5-20 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Line Settings (continued)

Parameter	Description	ONS 15454 (ANSI) Options	ONS 15454 SDH (ETSI) Options
ALS Mode	Sets the ALS function mode. The DWDM transmitter supports ALS according to ITU-T G.644 (06/99). ALS can be disabled, or it can be set for one of three mode options.	• Disabled (default): ALS is off; the laser is not automatically shut down when traffic outages (LOS) occur. • Auto Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. It automatically restarts when the conditions that caused the outage are resolved. • Manual Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. However, the laser must be manually restarted when conditions that caused the outage are resolved. • Manual Restart for Test: Manually restarts the laser for testing.	• Disabled (default): ALS is off; the laser is not automatically shut down when traffic outages (LOS) occur. • Auto Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. It automatically restarts when the conditions that caused the outage are resolved. • Manual Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. However, the laser must be manually restarted when conditions that caused the outage are resolved. • Manual Restart for Test: Manually restarts the laser for testing.
AINS Soak	(SONET [ANSI] or SDH [ETSI] including 10G Ethernet WAN Phy only) Sets the automatic in-service soak period. Double-click the time and use the up and down arrows to change settings.	• Duration of valid input signal, in hh.mm format, after which the card becomes in service (IS) automatically • 0 to 48 hours, 15-minute increments	• Duration of valid input signal, in hh.mm format, after which the card becomes in service (IS) automatically • 0 to 48 hours, 15-minute increments
ProvidesSync	(TXP_MR_10G, TXP_MR_10E, OC192 only) Sets the ProvidesSync card parameter. If checked, the card is provisioned as a network element (NE) timing reference.	Checked or unchecked	Checked or unchecked
SyncMsgIn	(TXP_MR_10G, TXP_MR_10E, OC192 only) Sets the EnableSync card parameter. Enables synchronization status messages (S1 byte), which allow the node to choose the best timing source.	Checked or unchecked	Checked or unchecked
Max Size	(TXP_MR_10E, TXP_MR_10G LAN Phy only) Sets the maximum Ethernet packet size.	• 1548 bytes • Jumbo (64 to 9,216 bytes)	• 1548 bytes • Jumbo (64 to 9,216 bytes)
Incoming MAC Address	(TXP_MR_10E, TXP_MR_10G LAN Phy only) Sets the incoming MAC address.	Value of MAC address. Six bytes in hexadecimal format.	Value of MAC address. Six bytes in hexadecimal format.

Table 5-20 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Line Settings (continued)

Parameter	Description	ONS 15454 (ANSI) Options	ONS 15454 SDH (ETSI) Options
Wavelength	Displays the wavelength of the client port.	• First Tunable Wavelength • Further wavelengths: 1310 nm through 1560.61 nm, 100-GHz ITU spacing; coarse wavelength division multiplexing (CWDM) spacing Note: supported wavelengths are marked by asterisks (**)	• First Tunable Wavelength • Further wavelengths: 1310 nm through 1560.61 nm, 100-GHz ITU spacing; coarse wavelength division multiplexing (CWDM) spacing Note: supported wavelengths are marked by asterisks (**)
Reach	Displays the optical reach distance of the client port.	The Reach options depend on the traffic type that has been selected.	The Reach options depend on the traffic type that has been selected.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G218 Change the 10G Multirate Transponder Line Section Trace Settings

Purpose	This task changes the line section trace settings for the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, and TXP_MR_10E_L transponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note The Section Trace tab is available for the 10G Multirate Transponder cards only if no PPMs are provisioned, or the OC192 PPM is provisioned. The tab is not available if a 10G Ethernet LAN Phy or 10G Fibre Channel PPM is provisioned.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L card where you want to change the section trace settings.

Step 2 Click the **Provisioning > Line > Section Trace** tabs.

Step 3 Modify any of the settings described in Table 5-21.

Table 5-21 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Section Trace Settings

Parameter	Description	ONS 15454 Options	Options — ONS 15454 SDH
Port	Sets the port number.	• 1-1 (OC192) • 2—Trunk	• 1-1 (STM64) • 2—Trunk
Received Trace Mode	Sets the trace mode.	• Off/None • Manual	• Off/None • Manual
Transmit Section Trace String Size	Sets the trace string size.	• 1 byte • 16 byte	• 1 byte • 16 byte
Transmit	Displays the current transmit string; sets a new transmit string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size	String of trace string size
Disable AIS/RDI on TIM-S	If an TIM on Section overhead alarm arises because of a J0 overhead string mismatch, no alarm indication signal is sent to downstream nodes if this box is checked.	• Checked (AIS/RDI on TIM-S is disabled) • Unchecked (AIS/RDI on TIM-S is not disabled)	• Checked (AIS/RDI on TIM-S is disabled) • Unchecked (AIS/RDI on TIM-S is not disabled)
Expected	Displays the current expected string; sets a new expected string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size	String of trace string size
Received	(Display only) Displays the current received string. You can click Refresh to manually refresh this display, or check the Auto-refresh every 5 sec check box to keep this panel updated.	String of trace string size	String of trace string size
Auto-refresh	If checked, automatically refreshes the display every 5 seconds.	Checked/unchecked (default)	Checked/unchecked (default)

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G368 Change the 10G Multirate Transponder Trunk Wavelength Settings

Purpose	This task changes the trunk wavelength settings for the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, and TXP_MR_10E_L cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note Before modifying the wavelength settings, change the port state to OOS,DSBLD (for ANSI) or Locked,disabled (for ETSI) and delete the circuit and patchcord provisioning present on the port. Payload or communication channel provisioning can be retained.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, and TXP_MR_10E_L card where you want to change the trunk wavelength settings.

Step 2 Click the **Provisioning > Line > Wavelength Trunk Settings** tabs.

Step 3 Modify any of the settings as described in Table 5-22.

Table 5-22 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, and TXP_MR_10E_L Card Wavelength Trunk Settings

Parameter	Description	Options
Port	(Display only) Displays the port number.	Port 2 (Trunk)
Band	Indicates the wavelength band that can be provisioned. If the physical TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, and TXP_MR_10E_L is installed, this field is display-only.	• C—The C-band wavelengths are available in the Wavelength field. • L—The L-band wavelengths are available in the Wavelength field.
Even/Odd	Sets the wavelengths available for provisioning for TXP_MR_10E_C, and TXP_MR_10E_L cards. (This field does not apply to TXP_MR_10G or TXP_MR_10E cards.)	• Even—Displays even C-band or L-band wavelengths in the Wavelength field. • Odd—Displays odd C-band or L-band wavelengths in the Wavelength field.
Wavelength	The wavelength provisioned for the trunk.	• First Tunable Wavelength • Further wavelengths in 100-GHz ITU-T C-band or L-band spacing, depending on the card that is installed. For TXP_MR_10G and TXP_MR_10E cards, the wavelengths carried by the card are identified with two asterisks. If the card is not installed, all wavelengths appear with a dark grey background.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G219 Change the 10G Multirate Transponder Line Thresholds for SONET or SDH Payloads Including 10G Ethernet WAN Phy

Purpose	This task changes the line threshold settings for TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, and TXP_MR_10E_L transponder cards carrying SONET or SDH payloads, including the physical 10G Ethernet WAN Phy payload.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L card where you want to change the line threshold settings.

Step 2 Click the **Provisioning > Line Thresholds > SONET Thresholds** (ANSI) or **SDH Thresholds** (ETSI) tabs.

Step 3 Modify any of the settings described in Table 5-23.

Note Parameters shown in Table 5-23 do not apply to all 10G multirate transponder cards. If the parameter or option does not apply, it is not shown in CTC.

Table 5-23 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_LCard Line Threshold Settings

Parameter	Description	Options - ANSI	Options - ETSI
Port	(Display only) Port number	• 1-1 (OC192) • 2 (Trunk)	• 1-1 (STM64) • 2 (Trunk)
EB	Path Errored Block indicates that one or more bits are in error within a block	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.

Table 5-23 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_LCard Line Threshold Settings (continued)

Parameter	Description	Options - ANSI	Options - ETSI
CV	Coding violations	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
ES	Errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
SES	Severely errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
SEFS	(Near End Section or Regeneration Section only) Severely errored framing seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
BBE	Background block errors	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.

Table 5-23 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_LCard Line Threshold Settings (continued)

Parameter	Description	Options - ANSI	Options - ETSI
FC	(Line or Multiplex Section only) Failure count	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
UAS	(Line or Multiplex Section only) Unavailable seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G319 Change the 10G Multirate Transponder Line RMON Thresholds for 10G Ethernet LAN Phy Payloads

Purpose	This task changes the line threshold settings for TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, and TXP_MR_10E_L transponder cards carrying the physical 10G Ethernet LAN payload.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Display the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L card where you want to change the line threshold settings in card view.

Step 2 Click the **Provisioning > Line Thresholds > RMON Thresholds** tabs.

Step 3 Click **Create**. The Create Threshold dialog box appears.

Step 4 From the Port drop-down list, choose the applicable port.

Step 5 From the Variable drop-down list, choose an Ethernet variable. See Table 5-24 for a list of available Ethernet variables.

Table 5-24 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Card GE LAN Phy Variables

Variable	Description
ifInOctets	Total number of octets received on the interface, including framing characters.
rxTotalPkts	Total number of received packets.
ifInMulticastPkts	Number of multicast frames received error free.
ifInBroadcastPkts	Number of packets, delivered by a sublayer to an higher sublayer, that were addressed to a broadcast address at this sublayer.
ifInErrors	Number of inbound packets that contained errors preventing them from being delivered to a higher-layer protocol.
ifInErrorBytePkts	Number of receive error bytes.
ifInFramingErrorPkts	Number of receive framing error counters.
ifInJunkInterPkts	Number of receive interpacket junk counters.
ifOutOctets	Total number of octets transmitted out of the interface, including framing characters.
txTotalPkts	Total number of transmit packets.
ifOutMulticastPkts	Number of multicast frames transmitted error free.
ifOutBroadcastPkts	Total number of packets that higher-level protocols requested be transmitted, and that were addressed to a broadcast address at this sublayer, including those that were discarded or not sent.
dot3StatsFCSErrors	Number of frames with frame check errors, that is, there is an integral number of octets, but an incorrect Frame Check Sequence (FCS).
dot3StatsFrameTooLong	Number of received frames that were larger than the maximum size permitted.
etherStatsUndersizePkts	Total number of packets received that were less than 64 octets long (excluding framing bits, but including FCS octets) and were otherwise well formed.
etherStatsFragments	Total number of packets received that were less than 64 octets in length (excluding framing bits but including FCS octets) and had either a bad FCS with an integral number of octets (FCS Error) or a bad FCS with a nonintegral number of octets (Alignment Error). Note that it is entirely normal for etherStatsFragments to increment. This is because it counts both runts (which are normal occurrences due to collisions) and noise hits.
etherStatsPkts64Octets	Total number of packets (including bad packets) received that were 64 octets in length (excluding framing bits but including FCS octets).
etherStatsPkts65to127Octets	Total number of packets (including bad packets) received that were between 65 and 127 octets in length inclusive (excluding framing bits but including FCS octets).

Table 5-24 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Card GE LAN Phy Variables (continued)

etherStatsPkts128to255Octets	The total number of packets (including bad packets) received that were between 128 and 255 octets in length inclusive (excluding framing bits but including FCS octets).
etherStatsPkts256to511Octets	Total number of packets (including bad packets) received that were between 256 and 511 octets in length inclusive (excluding framing bits but including FCS octets).
etherStatsPkts512to1023Octets	Total number of packets (including bad packets) received that were between 512 and 1023 octets in length inclusive (excluding framing bits but including FCS octets).
etherStatsPkts1024to1518Octets	Total number of packets (including bad packets) received that were between 1024 and 1518 octets in length inclusive (excluding framing bits but including FCS octets).
etherStatsBroadcastPkts	Total number of good packets received that were directed to the broadcast address. Note that this does not include multicast packets.
etherStatsMulticastPkts	Total number of good packets received that were directed to a multicast address. Note that this number does not include packets directed to the broadcast address.
etherStatsOversizePkts	The total number of packets received that were longer than 1518 octets (excluding framing bits, but including FCS octets) and were otherwise well formed.
etherStatsJabbers	Total number of packets received that were longer than 1518 octets (excluding framing bits, but including FCS octets), and had either a bad FCS with an integral number of octets (FCS Error) or a bad FCS with a nonintegral number of octets (Alignment Error).
etherStatsOctets	Total number of octets of data (including those in bad packets) received on the network (excluding framing bits but including FCS octets).
etherStatsCRCAlignErrors	Total number of packets received that had a length (excluding framing bits, but including FCS octets) of between 64 and 1518 octets, inclusive, but had either a bad FCS with an integral number of octets (FCS Error) or a bad FCS with a nonintegral number of octets (Alignment Error).
rxPauseFrames	Number of received IETF 802.x pause frames.
rxControlFrames	Number of MAC control frames passed by the MAC sublayer to the MAC control sublayer.
rxUnknownOpcodeFrames	Number of MAC control frames received that contain an opcode that is not supported by the device.

Step 6 From the Alarm Type drop-down list, indicate whether the event will be triggered by the rising threshold, the falling threshold, or both the rising and falling thresholds.

Step 7 From the Sample Type drop-down list, choose either **Relative** or **Absolute**. Relative restricts the threshold to use the number of occurrences in the user-set sample period. Absolute sets the threshold to use the total number of occurrences, regardless of time period.

Step 8 Type in an appropriate number of seconds for the Sample Period.

Step 9 Type in the appropriate number of occurrences for the Rising Threshold.

For a rising type of alarm, the measured value must move from below the falling threshold to above the rising threshold. For example, if a network is running below a rising threshold of 1000 collisions every 15 seconds and a problem causes 1001 collisions in 15 seconds, the excess occurrences trigger an alarm.

Step 10 Enter the appropriate number of occurrences in the Falling Threshold field. In most cases a falling threshold is set lower than the rising threshold.

A falling threshold is the counterpart to a rising threshold. When the number of occurrences is above the rising threshold and then drops below a falling threshold, it resets the rising threshold. For example, when the network problem that caused 1001 collisions in 15 seconds subsides and creates only 799 collisions in 15 seconds, occurrences fall below a falling threshold of 800 collisions. This resets the rising threshold so that if network collisions again spike over a 1000 per 15-second period, an event again triggers when the rising threshold is crossed. An event is triggered only the first time a rising threshold is exceeded (otherwise, a single network problem might cause a rising threshold to be exceeded multiple times and cause a flood of events).

Step 11 Click **OK**.

Note To view all RMON thresholds, click **Show All RMON thresholds**.

Step 12 Return to your originating procedure (NTP).

DLP-G301 Provision the 10G Multirate Transponder Trunk Port Alarm and TCA Thresholds

Purpose	This task provisions the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L trunk port alarm and threshold cross alert (TCA) thresholds.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L card where you want to change the trunk port alarm and TCA settings.

Step 2 Click the **Provisioning > Optics Thresholds** tabs.

Step 3 Under Types, verify that the TCA radio button is checked. If not, check it, then click **Refresh**.

Step 4 Referring to Table 5-25, provision the trunk port (Port 2) TCA thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Note Do not modify the Laser Bias parameters.

Table 5-25 10G Multirate Transponder Trunk Port TCA Thresholds

Card	TCA RX Power High	TCA RX Power Low	TCA TX Power High	TCA TX Power Low
TXP_MR_10G	–8 dBm	–22 dBm	7 dBm	–1 dBm
TXP_MR_10E TXP_MR_10E_C TXP_MR_10E_L	–9 dBm	–18 dBm	9 dBm	0 dBm

Step 5 Click **Apply**.

Step 6 Under Types, click the **Alarm** radio button and click **Refresh**.

Step 7 Referring to Table 5-26, provision the trunk port (Port 2) Alarm thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Table 5-26 10G Multirate Transponder Trunk Port Alarm Thresholds

Card	Alarm RX Power High	Alarm RX Power Low	Alarm TX Power High	Alarm TX Power Low
TXP_MR_10G	–8 dBm	–24 dBm	4 dBm	2 dBm
TXP_MR_10E TXP_MR_10E_C TXP_MR_10E_L	–8 dBm	–20 dBm	7 dBm	3 dBm

Step 8 Click **Apply**.

Step 9 Return to your originating procedure (NTP).

DLP-G302 Provision the 10G Multirate Transponder Client Port Alarm and TCA Thresholds

Purpose	This task provisions the client port alarm and TCA thresholds for the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, and TXP_MR_10E_L cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G278 Provision the Optical Line Rate, page 5-11 DLP-G46 Log into CTC, page 2-27
Required/As Needed	Required
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L card where you want to change the client port alarm and TCA settings.

Step 2 Click the **Provisioning > Optics Thresholds** tabs. The TCA thresholds are shown by default.

Step 3 Under Types, verify that the TCA radio button is checked. If not, check it, then click **Refresh**.

Step 4 Referring to Table 5-27, provision the Port 1 (Client) TCA thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low based on the client interface at the other end.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Note Do not modify the Laser Bias parameters.

Note The hardware device that plugs into a TXP, MXP, GE_XP, 10GE_XP, or ADM-10G card faceplate to provide a fiber interface to the card is called a Small Form-factor Pluggable (SFP or XFP). In CTC, SFPs and XFPs are called pluggable port modules (PPMs). SFPs/XFPs are hot-swappable input/output devices that plug into a port to link the port with the fiber-optic network. Multirate PPMs have provisionable port rates and payloads. For more information about SFPs and XFPs, refer to the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual.*

Table 5-27 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Card Client Interface TCA Thresholds

Pluggable Port Rate	Pluggable Port Module (XFP)	TCA RX Power High	TCA RX Power Low	TCA TX Power High	TCA TX Power Low
SONET (or SDH)	TXP_MR_10E uses ONS-XC-10G-S1 TXP_MR_10G (XFP not present)	–1	–11	5	–12
10G Ethernet LAN Phy	TXP_MR_10E uses ONS-XC-10G-S1 TXP_MR_10G (XFP not present)	1	–14	5	–12
10G Ethernet WAN PHY	TXP_MR_10E uses ONS-XC-10G-S1 TXP_MR_10G (XFP not present)	1	–14	5	–12
10G Fibre Channel	TXP_MR_10E uses ONS-XC-10G-S1 TXP_MR_10G (XFP not present)	1	–14	5	–12

Step 5 Click **Apply**.

Step 6 Under Types, click the **Alarm** radio button and click **Refresh**.

Step 7 Referring to Table 5-28, provision the Port 1 (Client) Alarm thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low based on the client interface that is provisioned.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Table 5-28 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Card Client Interface Alarm Thresholds

Pluggable Port Rate	Pluggable Port Module (XFP)	Alarm RX Power High	Alarm RX Power Low	Alarm TX Power High	Alarm TX Power Low
SONET (or SDH)	TXP_MR_10E uses ONS-XC-10G-S1 TXP_MR_10G (XFP not present)	2	–14	2	–9
10G Ethernet LAN Phy	TXP_MR_10E uses ONS-XC-10G-S1 TXP_MR_10G (XFP not present)	4	–17	2	–9

Table 5-28 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Card Client Interface Alarm Thresholds (continued)

Pluggable Port Rate	Pluggable Port Module (XFP)	Alarm RX Power High	Alarm RX Power Low	Alarm TX Power High	Alarm TX Power Low
10G Ethernet WAN PHY	TXP_MR_10E uses ONS-XC-10G-S1 TXP_MR_10G (XFP not present)	4	–17	2	–9
10G Fibre Channel	TXP_MR_10E uses ONS-XC-10G-S1 TXP_MR_10G (XFP not present)	4	–17	2	–9

Step 8 Click **Apply**.

Step 9 Return to your originating procedure (NTP).

DLP-G221 Change the 10G Multirate Transponder OTN Settings

Purpose	This task changes the line OTN settings for the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, and TXP_MR_10E_L transponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L card where you want to change the OTN settings.

Step 2 Click the **Provisioning > OTN** tabs, then click one of the following subtabs: **OTN Lines**, **G.709 Thresholds**, **FEC Thresholds**, or **Trail Trace Identifier**.

Step 3 Modify any of the settings described in Tables 5-29 through 5-32.

Note You must modify Near End and Far End independently, 15 Min and 1 Day independently, and SM and PM independently. To do so, choose the appropriate radio button and click **Refresh**.

Table 5-29 describes the values on the Provisioning > OTN > OTN Lines tab.

Table 5-29 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Card OTN Lines Settings

Parameter	Description	Options
Port	(Display only) Displays the port number and optional name.	2
G.709 OTN	Sets the OTN lines according to ITU-T G.709. Check the box to enable.	• Enable • Disable
FEC	Sets the OTN lines FEC mode. FEC mode can be Disabled, Enabled, or, for the TXP_MR_10E, Enhanced FEC mode can be enabled to provide greater range and lower bit error rate. For TXP_MR_10E cards, Standard is the same as enabling FEC.	• Enable—(TXP_MR_10G only) FEC is on. • Disable—FEC is off. • Standard—(TXP_MR_10E only) Standard FEC is on. • Enhanced—(TXP_MR_10E only) Enhanced FEC is on.
SD BER	Sets the signal degrade bit error rate.	• 1E-5 • 1E-6 • 1E-7 • 1E-8 • 1E-9
SF BER	(Display only) Indicates the signal fail bit error rate.	• 1E-5
Asynch/Synch Mapping	(TXP_MR_10E only) Sets how the ODUk (client payload) is mapped to the optical channel (OTUk).	• Asynch mapping • Synch mapping

Table 5-30 describes the values on the Provisioning > OTN > G.709 Thresholds tab.

Table 5-30 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Card ITU-T G.709 Threshold Settings

Parameter	Description	Options
Port	(Display only) Displays the port number and optional name.	2
ES	Severely errored seconds. Two types of thresholds can be asserted. Selecting the SM (OTUk) radio button selects FEC, overhead management, and PM using OTUk. Selecting the PM radio button selects path PM using ODUk.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**. **Note** SM (OTUk) is the ITU-T G.709 optical channel transport unit order of k overhead frame used for management and performance monitoring. PM (ODUk) is the ITU-T G.709 optical channel data unit order of k overhead frame unit used for path performance monitoring.
SES	Severely errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**.
UAS	Unavailable seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**.

Table 5-30 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Card ITU-T G.709 Threshold Settings (continued)

Parameter	Description	Options
BBE	Background block errors	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**.
FC	Failure counter	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**.

Table 5-31 describes the values on the Provisioning > OTN > FEC Thresholds tab.

Table 5-31 TXP_MR_10G, TXP_MR_10E, TXP_MR_10E_C, or TXP_MR_10E_L Card FEC Threshold Settings

Parameter	Description	Options
Port	(Display only) Displays the port number and optional name.	2
Bit Errors Corrected	Displays the number of bit errors corrected during the selected time period.	Numeric display. Can be set for 15-minute or one-day intervals.
Uncorrectable Words	Displays the number of uncorrectable words in the selected time period.	Numeric display. Can be set for 15-minute or one-day intervals.

Table 5-32 describes the values on the Provisioning > OTN > Trail Trace Identifier tab.

Table 5-32 10G Multirate Transponder Trail Trace Identifier Settings

Parameter	Description	Options
Port	Sets the port number.	• 1 • 2
Level	Sets the level.	• Section • Path
Received Trace Mode	Sets the trace mode.	• Off/None • Manual

Table 5-32 10G Multirate Transponder Trail Trace Identifier Settings (continued)

Parameter	Description	Options
Disable FDI on TTIM	If a Trace Identifier Mismatch on Section overhead alarm arises because of a J0 overhead string mismatch, no Forward Defect Indication (FDI) signal is sent to the downstream nodes if this box is checked.	• Checked (FDI on TTIM is disabled) • Unchecked (FDI on TTIM is not disabled)
Transmit	Displays the current transmit string; sets a new transmit string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size; trail trace identifier is 64 bytes in length.
Expected	Displays the current expected string; sets a new expected string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Received	(Display only) Displays the current received string. You can click Refresh to manually refresh this display, or check the Auto-refresh every 5 sec check box to keep this panel updated.	String of trace string size
Auto-refresh	If checked, automatically refreshes the display every 5 minutes.	Checked/unchecked (default)

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

NTP-G170 Provision the ADM-10G Card Peer Group, Ethernet Settings, Line Settings, PM Parameters, and Thresholds

Purpose	This procedure creates an ADM-10G peer group and changes line settings, PM parameters, and threshold settings for ADM-10G cards.
Tools/Equipment	None
Prerequisite Procedures	NTP-G179 Install the TXP, MXP, GE_XP, 10GE_XP, and ADM-10G Cards, page 3-55 DLP-G63 Install an SFP or XFP, page 3-57 DLP-G411 Provision an ADM-10G PPM and Port, page 5-7 (if necessary) DLP-G278 Provision the Optical Line Rate, page 5-11 (if necessary)
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note The ADM-10G card is not supported on the SDH (ETSI) platform.

Step 1 Complete the "DLP-G46 Log into CTC" task on page 2-27 at the node where you want to change the ADM-10G card settings. If you are already logged in, continue with Step 2.

Step 2 As needed, complete the "NTP-G103 Back Up the Database" procedure on page 13-2 to preserve the existing transmission settings.

Step 3 To provision a peer group, complete the "DLP-G396 Change the ADM-10G Card Interlink Port Settings" task on page 5-64 and then complete the "DLP-G403 Create the ADM-10G Peer Group" task on page 5-65.

Step 4 To provision ethernet settings, complete the "DLP-G469 Provision the ADM-10G Card Ethernet Settings" task on page 5-66.

Step 5 To change line settings, complete the following tasks as needed:

- DLP-G397 Change the ADM-10G Line Settings, page 5-67
- DLP-G398 Change the ADM-10G Line Section Trace Settings, page 5-70
- DLP-G399 Change the ADM-10G Line Thresholds for SONET Payloads, page 5-71
- DLP-G412 Change the ADM-10G Line RMON Thresholds for the 1G Ethernet Payload, page 5-72

Step 6 To change thresholds, complete the following tasks as needed:

- DLP-G400 Provision the ADM-10G Trunk Port Alarm and TCA Thresholds, page 5-75
- DLP-G401 Provision the ADM-10G Interlink Port Alarm and TCA Thresholds, page 5-76
- DLP-G402 Change the ADM-10G OTN Settings, page 5-77

Stop. You have completed this procedure.

DLP-G396 Change the ADM-10G Card Interlink Port Settings

Purpose	This task changes the interlink port settings to enable peer grouping between two ADM-10G cards.
Tools/Equipment	None
Prerequisite Procedures	NTP-G179 Install the TXP, MXP, GE_XP, 10GE_XP, and ADM-10G Cards, page 3-55, for two ADM-10G cards (located on both sides of the same shelf or in different shelves) for which a peer group is needed. DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note You can perform this task on a single ADM-10G card; however, peer group communication is not enabled until you perform the task on two cards within the same node.

Note After you perform this task, you do not need to provision a separate circuit to carry the interlink. This operation is carried out as a background operation if the interlink is active and functional.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the ADM-10G card where you want to change the card settings.

Step 2 Click the **Provisioning > Line > Ports** tab.

Step 3 In the Port column, locate the lines for Port 17-1 (Interlink) and Port 18-1 (Interlink).

Step 4 In the Admin State column, change the administrative state for Port 17-1 and Port 18-1 to IS, then click **Apply**.

Step 5 Repeat Steps 1 through 4 as needed for the other ADM-10G card that will be included in the peer group.

Step 6 Return to your originating procedure (NTP).

DLP-G403 Create the ADM-10G Peer Group

Purpose	This task creates peer group protection for two ADM-10G cards within the same node, located on the same shelf.
Tools/Equipment	None
Prerequisite Procedures	NTP-G179 Install the TXP, MXP, GE_XP, 10GE_XP, and ADM-10G Cards, page 3-55, for two ADM-10G cards—located on both sides of the same shelf—for which a peer group is desired. DLP-G46 Log into CTC, page 2-27 DLP-G396 Change the ADM-10G Card Interlink Port Settings, page 5-64
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note You cannot perform this task on a single ADM-10G card; it is only available if a second ADM-10G card can be accessed through the interlink ports.

Note The ADM-10G card supports only double-card configuration.

Note You need to perform this task only on one of the two peer cards.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the ADM-10G card where you want to change the card settings.

Step 2 Click the **Provisioning > Card** tabs.

Step 3 In the **ADM Group Peer** drop-down list, choose the slot number (for example, 14) where the companion ADM-10G card is located.

Step 4 In the **ADM Peer Group** field, enter a group name.

Step 5 Click **Apply**.

Note The Card Parameters Tunable Wavelengths area is read-only and does not contain any wavelengths until circuits are separately provisioned for the card.

Step 6 Return to your originating procedure (NTP).

DLP-G469 Provision the ADM-10G Card Ethernet Settings

Purpose	This task changes the Ethernet settings for the ADM-10G card.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the ADM-10G card where you want to change the Ethernet settings. The card view opens.

Step 2 Click the **Provisioning > Line > Ethernet** tabs.

Step 3 Modify any of the settings for the Ethernet tab as described in Table 5-33. The parameters that appear depend on the card mode.

Table 5-33 ADM-10G Card Ethernet Settings

Parameter	Description	Options
Port	(Display only) The Port number (*n-n*) and rate.	—
MTU	The maximum size of the Ethernet frames accepted by the port.	Numeric. Default: 9216 Range 64 to 9216 (jumbo frame)
AINS Soak	Automatic in-service soak time. The duration of time that must pass with an uninterrupted signal before the traffic/termination transitions to the unlocked-enabled service state.	—
Mode	Sets the Ethernet mode.	1000 Mbps

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G397 Change the ADM-10G Line Settings

Purpose	This task changes the line settings for ADM-10G cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the ADM-10G card where you want to change the line settings.

Step 2 Click the **Provisioning > Line** tabs and the **Ports**, **SONET**, or **SDH** subtabs.

Step 3 Modify any of the settings described in Table 5-34 as needed.

Note In Table 5-34, some parameter tabs do not always apply to all ADM-10G cards. If a tab does not apply, it will not appear in CTC.

Table 5-34 ADM-10G Line Port Tab Settings

Parameter	Description	ONS 15454 Options
Port	(Display only) Displays the port number.	• 17 (Interlink) • 18 (Interlink) • 1-16, 19 (OC192)
Port Name	Provides the ability to assign the specified port a name.	User-defined. Name can be up to 32 alphanumeric/special characters. Blank by default. See the "DLP-G104 Assign a Name to a Port" task on page 7-3.
Admin State	Sets the port service state. For more information about administrative states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS • OOS,DSBLD • OOS,MT **Note** IS,AINS is not supported on the ADM-10G card.

Table 5-34 ADM-10G Line Port Tab Settings (continued)

Parameter	Description	ONS 15454 Options
Service State	(Display only) Identifies the autonomously generated state that gives the overall condition of the port. Service states appear in the format: Primary State-Primary State Qualifier, Secondary State. For more information about service states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS-NR • OOS-AU,AINS • OOS-MA,DSBLD • OOS-MA,MT
ALS Mode	Sets the ALS function mode. The DWDM transmitter supports ALS according to ITU-T G.644 (06/99). ALS can be disabled, or it can be set for one of three mode options.	• Disabled (default): ALS is off; the laser is not automatically shut down when traffic outages (LOS) occur. • Auto Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. It automatically restarts when the conditions that caused the outage are resolved. • Manual Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. However, the laser must be manually restarted when conditions that caused the outage are resolved. • Manual Restart for Test: Manually restarts the laser for testing.
AINS Soak	(SONET [ANSI] including 10G Ethernet WAN Phy only) Sets the automatic in-service soak period. Double-click the time and use the up and down arrows to change settings. **Note**: AINS is not supported on Interlink ports.	• Duration of valid input signal, in hh.mm format, after which the card becomes in service (IS) automatically • 0 to 48 hours, 15-minute increments **Note** The AINS service state is not supported on Interlink ports.
Reach	Displays the optical reach distance of the client port.	The Reach options depend on the traffic type that has been selected.
Wavelength	Tunable Wavelength	(Display only) Shows the supported wavelengths of the trunk port after the card is installed in the format: *first wavelength-last wavelength-frequency spacing-number of supported wavelengths*. For example, 1529.55nm-1561.83nm-50gHz-8 are supported wavelengths.

Step 4 Click **Apply**.

Step 5 Modify any of the settings described in Table 5-35 as needed.

Table 5-35 ADM-10G Line SONET or SDH Tab Settings

Parameter	Description	ONS 15454 Options
Port	(Display only) Displays the trunk port number.	19 (OC192)
ProvidesSync	Sets the ProvidesSync card parameter. If checked, the card is provisioned as an NE timing reference.	Checked or unchecked
SyncMsgIn	Enables synchronization status messages (S1 byte), which allow the node to choose the best timing source.	Checked or unchecked
SF BER	Sets the signal fail bit error rate.	• 1E-3 • 1E-4 • 1E-5
Send DoNotUse	When checked, sends a DUS message on the S1 byte.	Checked or unchecked
SD BER	Sets the signal degrade bit error rate.	• 1E-5 • 1E-6 • 1E-7 • 1E-8 • 1E-9
Type	Type of node (display only)	SONET or SDH
Admin SSM In	Overrides the synchronization status message (SSM) synchronization traceability unknown (STU) value. If the node does not receive an SSM signal, it defaults to STU.	• PRS—Primary Reference Source (Stratum 1) • ST2—Stratum 2 • TNC—Transit node clock • ST3E—Stratum 3E • ST3—Stratum 3 • SMC—SONET minimum clock • ST4—Stratum 4 • DUS—Do not use for timing synchronization • RES—Reserved; quality level set by user

Step 6 Return to your originating procedure (NTP).

DLP-G398 Change the ADM-10G Line Section Trace Settings

Purpose	This task changes the line section trace settings for the ADM-10G cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note The Section Trace tab is available for ports configured as OC-N (Ports 1 through 16, and Port 19). Section trace is not available on interlink ports.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the ADM-10G card where you want to change the section trace settings. The card view opens.

Step 2 Click the **Provisioning > Line > Section Trace** tabs.

Step 3 Modify any of the settings described in Table 5-36.

Table 5-36 ADM-10G Section Trace Settings

Parameter	Description	ONS 15454 Options
Port	Sets the port number.	• 1-1 to 16-1 (OC-3, OC-12, OC-48) • 19-1 (OC-192) • 2—Trunk
Received Trace Mode	Sets the trace mode.	• Off/None • Manual
Transmit Section Trace String Size	Sets the trace string size.	• 1 byte • 16 byte • 64 byte
Current	Current Transmit String displays the current transmit string; New Transmit String sets a new transmit string. Current String Type allows you to choose between ASCII or Hexadecimal format. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Received	Current Received String (display only) displays the current received string. You can click Refresh to manually refresh this display, or check the Auto-refresh every 5 sec check box to keep this panel updated.	String of trace string size
Auto-refresh	If checked, automatically refreshes the display every 5 seconds.	Checked/unchecked (default)

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G399 Change the ADM-10G Line Thresholds for SONET Payloads

Purpose	This task changes the line threshold settings for ADM-10G cards carrying SONET payloads.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the ADM-10G card where you want to change the line threshold settings. The card view opens.

Step 2 Click the **Provisioning > Line Thresholds > SONET Thresholds** tabs.

Step 3 Modify any of the settings described in Table 5-37.

Table 5-37 ADM-10G Card Line Threshold Settings

Parameter	Description	Options - ANSI
Port	(Display only) Port number	• 1-1 to 16-1 (OC-3, OC-12, OC-48) • 19-1 (OC-192)
CV	Coding violations	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.
ES	Errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.
SES	Severely errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.

Table 5-37 ADM-10G Card Line Threshold Settings (continued)

Parameter	Description	Options - ANSI
FC	(Line Section only) Failure count	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.
UAS	(Line Section only) Unavailable seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G412 Change the ADM-10G Line RMON Thresholds for the 1G Ethernet Payload

Purpose	This task changes the line RMON threshold settings for an ADM-10G card carrying the 1G Ethernet payload.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27 DLP-G411 Provision an ADM-10G PPM and Port, page 5-7
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note This task can only be performed if the ADM-10G card has at least one PPM port provisioned for Gigabit Ethernet.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the ADM-10G card where you want to change the line RMON thresholds. The card view opens.

Step 2 Click the **Provisioning > Line Thresholds > RMON Thresholds** tabs.

Step 3 Click **Create**. The Create Threshold dialog box appears.

Step 4 From the Port drop-down list, choose the applicable port.

Step 5 From the Variable drop-down list, choose the applicable Ethernet variable. See Table 5-38 for a list of available Ethernet variables.

Table 5-38 ADM-10G Gigabit Ethernet Thresholds

Variable	Description
ifInOctets	Total number of octets received on the interface, including framing characters.
ifInErrors	Number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol.
ifOutOctets	Total number of octets transmitted out of the interface, including framing characters.
ifInMulticastPkts	Number of multicast frames received error-free.
ifInBroadcastPkts	Number of packets, delivered by a sublayer to a higher layer or sublayer, that were addressed to a broadcast address at this sublayer.
ifInErrorBytePkts	Number of receive error bytes.
dot3StatsFCSErrors	Number of frames with frame check errors; that is, there is an integral number of octets, but there is also an incorrect frame check sequence (FCS).
dot3StatsFrameTooLong	Number of received frames that were larger than the permitted maximum size.
dot3ControlInUnknownOpcodes	A count of MAC control frames received on this interface that contain an opcode not supported by this device.
dot3InPauseFrames	A count of MAC control frames received on this interface with an opcode indicating the PAUSE operation.
dot3OutPauseFrames	A count of MAC control frames transmitted on this interface with an opcode indicating the PAUSE operation.
etherStatsUndersizePkts	Total number of packets received that were well-formed and less than 64 octets long (excluding framing bits and including FCS octets).
etherStatsFragments	Total number of packets received that were less than 64 octets in length (excluding framing bits but including FCS octets) and had either a bad FCS with an integral number of octets (FCS error) or a bad FCS with a nonintegral number of octets (alignment error). **Note** It is normal for etherStatsFragments to increment. This is because it counts both runts (which are normal occurrences due to collisions) and noise hits.
etherStatsPkts64Octets	Total number of packets (including bad packets) received that were 64 octets in length (excluding framing bits and including FCS octets).
etherStatsPkts65to127Octets	Total number of packets (including bad packets) received that were between 65 and 127 octets in length, inclusive.
etherStatsPkts128to255Octets	The total number of packets (including bad packets) received that were between 128 and 255 octets in length, inclusive, excluding framing bits and including FCS octets.
etherStatsPkts256to511Octets	Total number of packets (including bad packets) received that were between 256 and 511 octets in length, inclusive.

Table 5-38 ADM-10G Gigabit Ethernet Thresholds (continued)

etherStatsPkts512to1023Octets	Total number of packets (including bad packets) received that were between 512 and 1023 octets in length, inclusive, excluding framing bits and including FCS octets.
etherStatsPkts1024to1518Octets	Total number of packets (including bad packets) received that were between 1024 and 1518 octets in length, inclusive, excluding framing bits and including FCS octets.
etherStatsBroadcastPkts	Total number of good packets received that were directed to the broadcast address. **Note** Multicast packets are not included.
etherStatsMulticastPkts	Total number of good packets received that were directed to a multicast address. **Note** This number does not include packets directed to the broadcast address.
etherStatsOversizePkts	Total number of packets received that were well-formed and longer than 1518 octets, excluding framing bits and including FCS octets.
etherStatsJabbers	Total number of packets received that were longer than 1518 octets (excluding framing bits and including FCS octets), and had a bad FCS with an integral number of octets (FCS error) or a bad FCS with a nonintegral number of octets (alignment error).
rxTotalPkts	Total number of received packets.
txTotalPkts	Total number of transmit packets.

Step 6 From the Alarm Type drop-down list, indicate whether the event will be triggered by the rising threshold, the falling threshold, or both the rising and falling thresholds.

Step 7 From the Sample Type drop-down list, choose either **Relative** or **Absolute**. Relative restricts the threshold to use the number of occurrences in the user-set sample period. Absolute sets the threshold to use the total number of occurrences, regardless of time period.

Step 8 Type in an appropriate number of seconds for the Sample Period.

Step 9 Type in the appropriate number of occurrences for the Rising Threshold.

For a rising type of alarm, the measured value must move from below the falling threshold to above the rising threshold. For example, if a network is running below a rising threshold of 1000 collisions every 15 seconds and a problem causes 1001 collisions in 15 seconds, the excess occurrences trigger an alarm.

Step 10 Enter the appropriate number of occurrences in the Falling Threshold field. In most cases a falling threshold is set lower than the rising threshold.

A falling threshold is the counterpart to a rising threshold. When the number of occurrences is above the rising threshold and then drops below a falling threshold, it resets the rising threshold. For example, when the network problem that caused 1001 collisions in 15 seconds subsides and creates only 799 collisions in 15 seconds, occurrences fall below a falling threshold of 800 collisions. This resets the rising threshold so that if network collisions again spike over a 1000 per 15-second period, an event again triggers when the rising threshold is crossed. An event is triggered only the first time a rising threshold is exceeded (otherwise, a single network problem might cause a rising threshold to be exceeded multiple times and cause a flood of events).

Step 11 Click **OK**.

Step 12 Return to your originating procedure (NTP).

DLP-G400 Provision the ADM-10G Trunk Port Alarm and TCA Thresholds

Purpose	This task provisions the ADM-10G trunk port alarm and threshold cross alert (TCA) thresholds.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the ADM-10G card where you want to change the trunk port alarm and TCA settings.

Step 2 Click the **Provisioning > Optics Thresholds** tabs.

Step 3 Under Types, verify that the TCA radio button is checked. If not, check it, then click **Refresh**.

Step 4 Referring to Table 5-39, provision the trunk port (Port 19-1) TCA thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Note Do not modify the Laser Bias parameters.

Table 5-39 ADM-10G Trunk Port TCA Thresholds

Port	TCA RX Power High	TCA RX Power Low	TCA TX Power High	TCA TX Power Low
19-1 (OC-192)	–7 dBm	–27 dBm	6.0 dBm	–4.0 dBm

Step 5 Click **Apply**.

Step 6 Under Types, click the **Alarm** radio button and click **Refresh**.

Step 7 Referring to Table 5-40, provision the trunk port (Port 19-1) alarm thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Table 5-40 ADM-10G Trunk Port Alarm Thresholds

Port	Alarm RX Power High	Alarm RX Power Low	Alarm TX Power High	Alarm TX Power Low
19-1 (OC-192)	–5 dBm	–30 dBm	5.0 dBm	-3.0 dBm

Step 8 Click **Apply**.

Step 9 Return to your originating procedure (NTP).

DLP-G401 Provision the ADM-10G Interlink Port Alarm and TCA Thresholds

Purpose	This task provisions the interlink port alarm and TCA thresholds for the ADM-10G card.
Tools/Equipment	None
Prerequisite Procedures	DLP-G278 Provision the Optical Line Rate, page 5-11 DLP-G46 Log into CTC, page 2-27
Required/As Needed	Required
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the ADM-10G card where you want to change the interlink port alarm and TCA settings.

Step 2 Click the **Provisioning > Optics Thresholds** tabs.

Step 3 Under Types, click the **Alarm** radio button and click **Refresh**.

Step 4 Referring to Table 5-13 and Table 5-14 on page 5-35, provision the Port 1 to 16 (Client) Alarm thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low based on the client interface that is provisioned.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Step 5 Click **Apply**.

Step 6 Return to your originating procedure (NTP).

DLP-G402 Change the ADM-10G OTN Settings

Purpose	This task changes the line OTN settings for the ADM-10G cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the ADM-10G card where you want to change the OTN settings.

Step 2 Click the **Provisioning > OTN** tabs, then click one of the following subtabs: **OTN Lines**, **ITU-T G.709 Thresholds**, **FEC Thresholds**, or **Trail Trace Identifier**.

Step 3 Modify any of the settings described in Tables 5-41 through 5-44.

Note You must modify Near End and Far End independently; 15 Min and 1 Day independently; and SM and PM independently. To do so, choose the appropriate radio button and click **Refresh**.

Table 5-41 describes the values on the Provisioning > OTN > OTN Lines tab.

Table 5-41 ADM-10G Card OTN Lines Settings

Parameter	Description	Options
Port	(Display only) Displays the port number and optional name.	19-1
ITU-TG.709 OTN	Sets the OTN lines according to ITU-T G.709.	• Enable • Disable
FEC	Sets the OTN lines FEC mode. FEC mode can be Disabled, Enabled, or, for the TXP_MR_10E, Enhanced FEC mode can be enabled to provide greater range and lower bit error rate. For TXP_MR_10E cards, Standard is the same as enabling FEC.	• Disable—FEC is off. • Standard—Standard FEC is on. • Enhanced—(Enhanced FEC is on.
SD BER	Sets the signal degrade bit error rate.	• 1E-5 • 1E-6 • 1E-7 • 1E-8 • 1E-9
SF BER	(Display only) Indicates the signal fail bit error rate.	• 1E-5
Synch Mapping	Sets how the ODUk (client payload) is mapped to the optical channel (OTUk).	Synch mapping

Table 5-42 describes the values on the Provisioning > OTN > ITU-T G.709 Thresholds tab.

Table 5-42 ADM-10G Card ITU-T G.709 Threshold Settings

Parameter	Description	Options
Port	(Display only) Displays the port number and optional name.	19-1
ES	Severely errored seconds. Two types of thresholds can be asserted. Selecting the SM (OTUk) radio button selects FEC, overhead management, and PM using OTUk. Selecting the PM radio button selects path PM using ODUk.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**. **Note** SM (OTUk) is the ITU-T G.709 optical channel transport unit order of k overhead frame used for management and performance monitoring. PM (ODUk) is the ITU-T G.709 optical channel data unit order of k overhead frame unit used for path performance monitoring.
SES	Severely errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**.
UAS	Unavailable seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**.

Table 5-42 ADM-10G Card ITU-T G.709 Threshold Settings (continued)

Parameter	Description	Options
BBE	Background block errors	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**.
FC	Failure counter	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**.

Table 5-43 describes the values on the Provisioning > OTN > FEC Thresholds tab.

Table 5-43 ADM-10G Card FEC Threshold Settings

Parameter	Description	Options
Port	(Display only) Displays the port number and optional name.	19-1
Bit Errors Corrected	Displays the number of bit errors corrected during the selected time period.	Numeric display. Can be set for 15-minute or one-day intervals.
Uncorrectable Words	Displays the number of uncorrectable words in the selected time period.	Numeric display. Can be set for 15-minute or one-day intervals.

Table 5-44 describes the values on the Provisioning > OTN > Trail Trace Identifier tab.

Table 5-44 ADM-10GTrail Trace Identifier Settings

Parameter	Description	Options
Port	Sets the port number.	19 (Trunk)
Level	Sets the level.	• Section • Path
Received Trace Mode	Sets the trace mode.	• Off/None • Manual

Table 5-44 ADM-10GTrail Trace Identifier Settings (continued)

Parameter	Description	Options
Transmit	Current Transmit String displays the current transmit string; New sets a new transmit string. You can click the button on the right to change the display. Its title changes, based on the current display mode. In Transmit String Type, click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size; trail trace identifier is 64 bytes in length.
Expected	Current Expected String displays the current expected string; New sets a new expected string. You can click the button on the right to change the display. Its title changes, based on the current display mode. In Expected String Type, click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Received	(Display only) Current Received String displays the current received string. You can click Refresh to manually refresh this display, or check the Auto-refresh every 5 sec check box to keep this panel updated.	String of trace string size
Auto-refresh (every 5 sec)	If checked, automatically refreshes the display every 5 seconds.	Checked/unchecked (default)

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

NTP-G333 Add an ADM-10G card to an Existing Topology

Purpose	This procedure adds an ADM-10G card to an existing topology. Perform the steps in this procedure when OCHNC and DCC are present in the network. In case of OCH trails, delete all the circuits in Step 3 that traverses the port before deleting the OCH-trail.
Tools/Equipment	None
Prerequisite Procedures	• "DLP-G46 Log into CTC" task on page 2-27 • Complete the turn up procedures in Turn Up a Node, page 3-1 for the node to be added. • An updated Cisco Transport Planner network plan recalculated with the new node.
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 If path protected circuits exist between Node A and Node B, complete the DLP-A197 Initiate a Path Protection Force Switch task. This task applies a force switch on the path between Node A and Node B.

Step 2 Complete the NTP-G129 Add a DWDM Node, page 12-9 task to add Node C.

Step 3 Complete the DLP-G106 Delete Optical Channel Network Connections, page 7-23 task to delete OCHNC circuit between Node A and Node B.

Step 4 Complete the NTP-G59 Create, Delete, and Manage Optical Channel Network Connections, page 7-21, task to create OCHNC circuit between Node A-->Node C and Node C-->Node B for wavelength connectivity.

Note The ports on the card in Node C must be tuned to the same wavelength as Node A and Node B.

Step 5 Create DCC terminations on Node C. See the DLP-A377 Provision Section DCC Terminations task.

Alternatively, if additional bandwidth is needed for CTC management, complete the DLP-A378 Provision Line DCC Terminations task.

Step 6 Ensure that the DCCs are functional between Node A-->Node C and Node C-->Node B. See the DLP-G76 Provision DCC/GCC Terminations, page 7-60 task.

Step 7 Complete the NTP-G200 Create, Delete, and Manage STS or VC Circuits for the ADM-10G Card, page 7-25 to create pass-through STS or VC circuits in Node C.

Step 8 Complete the NTP-A301 Merge Circuits task for each circuit created.

Step 9 If path protected circuits exist between Node A and Node B, complete the DLP-A198 Clear a Path Protection Force Switch task. This task clears a force switch on the path between Node A and Node B.

Stop. You have completed this procedure.

NTP-G97 Modify the 4x2.5G Muxponder Card Line Settings and PM Parameter Thresholds

Purpose	This procedure changes the line and threshold settings for the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	NTP-G179 Install the TXP, MXP, GE_XP, 10GE_XP, and ADM-10G Cards, page 3-55. DLP-G63 Install an SFP or XFP, page 3-57 DLP-G277 Provision a Multirate PPM, page 5-8 (if necessary) DLP-G278 Provision the Optical Line Rate, page 5-11 (if necessary)
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Complete the "DLP-G46 Log into CTC" task on page 2-27 at the node where you want to change the muxponder card settings. If you are already logged in, continue with Step 2.

Step 2 As needed, complete the "NTP-G103 Back Up the Database" procedure on page 13-2 to preserve the existing transmission settings.

Step 3 Perform any of the following tasks as needed:

- DLP-G222 Change the 4x2.5G Muxponder Card Settings, page 5-83
- DLP-G223 Change the 4x2.5G Muxponder Line Settings, page 5-85
- DLP-G224 Change the 4x2.5G Muxponder Section Trace Settings, page 5-87
- DLP-G225 Change the 4x2.5G Muxponder Trunk Settings, page 5-89
- DLP-G226 Change the 4x2.5G Muxponder SONET/SDH Line Thresholds Settings, page 5-92
- DLP-G303 Provision the 4x2.5G Muxponder Trunk Port Alarm and TCA Thresholds, page 5-94
- DLP-G304 Provision the 4x2.5G Muxponder Client Port Alarm and TCA Thresholds, page 5-96
- DLP-G228 Change the 4x2.5G Muxponder Line OTN Settings, page 5-98
- DLP-G369 Change the 4x2.5G Muxponder Trunk Wavelength Settings, page 5-91

Step 4 As needed, complete the "NTP-G103 Back Up the Database" procedure on page 13-2.

Stop. You have completed this procedure.

DLP-G222 Change the 4x2.5G Muxponder Card Settings

Purpose	This task changes the card settings for the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L muxponder cards, including payload type, termination mode, and wavelength.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L card where you want to change the card settings.

Step 2 Click the **Provisioning > Card** tabs.

Step 3 Modify any of the settings described in Table 5-45.

Note Parameters shown in Table 5-45 do not apply to all 4x2.5G muxponder cards. If the parameter or option does not apply, it is not shown in CTC.

Table 5-45 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Card Settings

Parameter	Description	Options
Termination Mode	Sets the mode of operation. Options that do not apply to a card do not display. The MXP_2.5G_10G card is based on SONET/SDH multiplexing. The transparent mode terminates and rebuilds the B1 byte (as well as other bytes) of the incoming OC-48/STM-16 signal. The B2 byte is not touched. The MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L cards are fully transparent in transparent mode based on the OTN/ITU-T G.709 multiplexing scheme. It does not terminate the B1 byte or other bytes. It encapsulates OC-48/STM-16 bytes into ODU1 first, then multiplexes them into an OTU2. Refer to the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual* for more details.	For ANSI platforms: • Transparent • Section (MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L only) • Line (MXP_2.5G_10G only) For ETSI platforms: • Transparent • Multiplex Section (MXP_2.5G_10G, only) • Regeneration Section (MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L only)
AIS/Squelch	(MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L only) Sets the transparent termination mode configuration.	• Ais • Squelch
Tunable Wavelengths	(Display only) Shows the supported wavelengths of the trunk port after the card is installed. For the MXP_2.5G_10E_C, or MXP_2.5G_10E_L cards, the first and last supported wavelength, frequency spacing, and number of supported wavelengths are shown in the format: *first wavelength-last wavelength-frequency spacing-number of supported wavelengths*. For example, the MXP_2.5G_10E_C card would show: 1529.55nm-1561.83nm-50gHz-82. The MXP_2.5G_10G and MXP_2.5G_10E show the four wavelengths supported by the card that is installed.	—

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G223 Change the 4x2.5G Muxponder Line Settings

Purpose	This task changes the line settings for the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L card where you want to change the line settings.

Step 2 Click the **Provisioning > Line > SONET** (ANSI) or **SDH** (ETSI) tabs.

Note The SONET tab appears only if you have created a PPM for a given port.

Step 3 Modify any of the settings described in Table 5-46.

Note You must modify Near End and Far End independently; 15 Min and 1 Day independently; and Line and Section independently. To do so, choose the appropriate radio button and click **Refresh**.

Table 5-46 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Card Line Settings

Parameter	Description	Options
Port	(Display only) Port number. Ports 1 to 4 are client ports (OC-48/STM-16). Port 5 is the DWDM trunk (OC-192/STM-64) that provides wavelength services. Client ports will not appear of the pluggable port module is not provisioned for it.	• 1 • 2 • 3 • 4 • 5 (Trunk) (MXP_2.5G_10G only)
Port Name	Provides the ability to assign the specified port a logical name.	User-defined. Name can be up to 32 alphanumeric/ special characters. Blank by default. See the "DLP-G104 Assign a Name to a Port" task on page 7-3.

Table 5-46 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Card Line Settings (continued)

Parameter	Description	Options
Admin State	Sets the port service state unless network conditions prevent the change. For more information about administrative states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS (ANSI) or Unlocked (ETSI) • IS,AINS (ANSI) or Unlocked,automaticInService (ETSI) • OOS,DSBLD (ANSI) or Locked,disabled (ETSI) • OOS,MT (ANSI) or Locked,maintenance (ETSI)
Service State	(Display only) Identifies the autonomously generated state that gives the overall condition of the port. Service states appear in the format: Primary State-Primary State Qualifier, Secondary State. For more information about service states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS-NR (ANSI) or Unlocked-enabled (ETSI) • OOS-AU,AINS (ANSI) or Unlocked-disabled, automaticInService (ETSI) • OOS-MA,DSBLD (ANSI) or Locked-enabled,disabled (ETSI) • OOS-MA,MT (ANSI) or Locked-enabled,maintenance (ETSI)
SF BER	Sets the signal fail bit error rate.	• 1E-3 • 1E-4 • 1E-5
SD BER	Sets the signal degrade bit error rate.	• 1E-5 • 1E-6 • 1E-7 • 1E-8 • 1E-9
ALS Mode	Sets the ALS function mode. The DWDM transmitter supports ALS according to ITU-T G.644 (06/99). ALS can be disabled or can be set for one of three mode options.	• Disable (default): ALS is off; the laser is not automatically shut down when traffic outages (LOS) occur. • Auto Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. It automatically restarts when the conditions that caused the outage are resolved. • Manual Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. However, the laser must be manually restarted when conditions that caused the outage are resolved. • Manual Restart for Test: Manually restarts the laser for testing.
AINS Soak	Sets the automatic in-service soak period. Double-click the time and use the up and down arrows to change settings.	• Duration of valid input signal, in hh.mm format, after which the card becomes in service (IS) automatically • 0 to 48 hours, 15-minute increments
Type	Sets the optical transport type.	• SONET • SDH

Table 5-46 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Card Line Settings (continued)

Parameter	Description	Options
SyncMsgIn	Enables synchronization status messages (S1 byte), which allow the node to choose the best timing source. (This parameter does not appear for the MXP_2.5G_10E trunk port.)	Checked or unchecked
ProvidesSync	Sets the ProvidesSync card parameter. If checked, the card is provisioned as an NE timing reference. (This parameter does not appear for the MXP_2.5G_10E trunk port.)	Checked or unchecked
Reach	Displays the optical reach distance of the client port.	Options: ANSI/ETSI • Autoprovision/Autoprovision (default) • SR • SR 1/I-1—Short reach up to 2-km distance • IR 1/S1—Intermediate reach, up to 15-km distance • IR 2/S2—Intermediate reach up to 40-km distance • LR 1/L1—long reach, up to 40-km distance • LR 2/L2—long reach, up to 80-km distance • LR 3/L3—long reach, up to 80-km distance
Wavelength	Displays the wavelength of the client port.	• First Tunable Wavelength • Further wavelengths: 850 nm through 1560.61 nm 100-GHz ITU spacing CWDM spacing

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G224 Change the 4x2.5G Muxponder Section Trace Settings

Purpose	This task changes the section trace settings for the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note The Section Trace tab appears only if you have created a PPM for the card.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L card where you want to change the section trace settings.

Step 2 Click the **Provisioning > Line > Section Trace** tabs.

Step 3 Modify any of the settings described in Table 5-47.

Table 5-47 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Card Section Trace Settings

Parameter	Description	Options
Port	Sets the port number.	• 1 • 2 • 3 • 4 • 5 (Trunk; MXP_2.5G_10G only)
Received Trace Mode	Sets the trace mode.	• Off/None • Manual
Disable AIS/RDI on TIM-S	If an TIM on Section overhead alarm arises because of a J0 overhead string mismatch, no alarm indication signal is sent to downstream nodes if this box is checked.	• Checked (AIS/RDI on TIM-S is disabled) • Unchecked (AIS/RDI on TIM-S is not disabled)
Transmit Section Trace String Size	Sets the trace string size. Select either radio button.	• 1 byte • 16 byte
Transmit	Displays the current transmit string; sets a new transmit string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Expected	Displays the current expected string; sets a new expected string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size

Table 5-47 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Card Section Trace Settings (continued)

Parameter	Description	Options
Received	(Display only) Displays the current received string. You can click Refresh to manually refresh this display, or check the Auto-refresh every 5 sec check box to keep this panel updated.	String of trace string size
Auto-refresh	If checked, automatically refreshes the display every 5 minutes.	Checked/unchecked (default)

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G225 Change the 4x2.5G Muxponder Trunk Settings

Purpose	This task provisions the trunk settings for the MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note This task does not apply to the MXP_2.5G_10G card.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L card where you want to change the trunk settings.

Step 2 Click the **Provisioning > Line > Trunk** tabs.

Step 3 Modify any of the settings described in Table 5-48.

Table 5-48 MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Card Trunk Settings

Parameter	Description	Options
Port	(Display only) Displays the port number. Port 5 is the DWDM trunk (OC-192/STM-64) that provides wavelength services.	5 (Trunk)
Port Name	Provides the ability to assign the specified port a logical name.	User-defined. Name can be up to 32 alphanumeric/ special characters. Blank by default. See the "DLP-G104 Assign a Name to a Port" task on page 7-3.

Table 5-48 MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Card Trunk Settings (continued)

Parameter	Description	Options
Admin State	Sets the port service state unless network conditions prevent the change. For more information about administrative states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS (ANSI) or Unlocked (ETSI) • IS,AINS (ANSI) or Unlocked,automaticInService (ETSI) • OOS,DSBLD (ANSI) or Locked,disabled (ETSI) • OOS,MT (ANSI) or Locked,maintenance (ETSI)
Service State	(Display only) Identifies the autonomously generated state that gives the overall condition of the port. Service states appear in the format: Primary State-Primary State Qualifier, Secondary State. For more information about service states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS-NR (ANSI) or Unlocked-enabled (ETSI) • OOS-AU,AINS (ANSI) or Unlocked-disabled, automaticInService (ETSI) • OOS-MA,DSBLD (ANSI) or Locked-enabled,disabled (ETSI) • OOS-MA,MT (ANSI) or Locked-enabled,maintenance (ETSI)
ALS Mode	Sets the ALS function mode. The DWDM transmitter supports ALS according to ITU-T G.644 (06/99). ALS can be disabled or can be set for one of three mode options.	• Disabled (default): ALS is off; the laser is not automatically shut down when traffic outages (LOS) occur. • Auto Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. It automatically restarts when the conditions that caused the outage are resolved. • Manual Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. However, the laser must be manually restarted when conditions that caused the outage are resolved. • Manual Restart for Test: Manually restarts the laser for testing.
AINS Soak	(OC-N and STM-N payloads only) Sets the automatic in-service soak period.	• Duration of valid input signal, in hh.mm format, after which the card becomes in service (IS) automatically • 0 to 48 hours, 15-minute increments

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G369 Change the 4x2.5G Muxponder Trunk Wavelength Settings

Purpose	This task changes the trunk wavelength settings for the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L card where you want to change the trunk wavelength settings.

Step 2 Click the **Provisioning > Line > Wavelength Trunk Settings** tabs.

Step 3 Modify any of the settings described in Table 5-49.

Table 5-49 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L Card Wavelength Trunk Settings

Parameter	Description	Options
Port	(Display only) Displays the port number.	5 (Trunk)
Band	(Display only) Indicates the wavelength band available from the card that is installed. If the card is preprovisioned, the field can be provisioned to the band of the card that will be installed.	• C—The C-band wavelengths are available in the Wavelength field. • L—The L-band wavelengths are available in the Wavelength field.
Even/Odd	Sets the wavelengths available for provisioning for MXP_2.5G_10E_C and MXP_2.5G_10E_L cards. (This field does not apply to MXP_2.5G_10G or MXP_2.5G_10E cards.)	• Even—Displays even C-band or L-band wavelengths in the Wavelength field. • Odd—Displays odd C-band or L-band wavelengths in the Wavelength field.
Wavelength	The wavelength provisioned for the trunk.	• First Tunable Wavelength • Further wavelengths in 100-GHz ITU-T C-band or L-band spacing, depending on the card that is installed. For MXP_2.5G_10G and MXP_2.5G_10E cards, the wavelengths carried by the card are identified with two asterisks. If the card is not installed, all wavelengths appear with a dark grey background.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G226 Change the 4x2.5G Muxponder SONET/SDH Line Thresholds Settings

Purpose	This task changes the SONET (ANSI) or SDH (ETSI) line threshold settings for the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L card where you want to change the line threshold settings.

Step 2 Click the **Provisioning > Line Thresholds** tabs.

Step 3 Modify any of the settings described in Table 5-50.

Note In Table 5-50, some parameter tabs or selections do not always apply to all 4x2.5G muxponder cards. If the tabs or selections do not apply, they do not appear in CTC.

Table 5-50 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_LCard Line Threshold Settings

Parameter	Description	Options - ONS 15454	Options - ONS 15454 SDH
Port	(Display only) Port number	• 1 • 2 • 3 • 4 • 5 (MXP_2.5G_10G only)	• 1 • 2 • 3 • 4 • 5 (MXP_2.5G_10G only)
EB	Path Errored Block indicates that one or more bits are in error within a block	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.

Table 5-50 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_LCard Line Threshold Settings

Parameter	Description	Options - ONS 15454	Options - ONS 15454 SDH
CV	Coding violations	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
ES	Errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
SES	Severely errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
SEFS	(Near End Section or Regeneration Section only) Severely errored framing seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
BBE	Background block errors	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.

Table 5-50 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_LCard Line Threshold Settings

Parameter	Description	Options - ONS 15454	Options - ONS 15454 SDH
FC	(Line or Multiplex Section only) Failure count	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
UAS	(Line or Multiplex Section only) Unavailable seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G303 Provision the 4x2.5G Muxponder Trunk Port Alarm and TCA Thresholds

Purpose	This task changes the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L trunk port alarm and TCA thresholds.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L card where you want to change the trunk port alarm and TCA settings.

Step 2 Click the **Provisioning > Optics Thresholds** tabs.

Step 3 Select **TCA** (if not already selected), a **15 Min** or **1 Day** PM interval radio button and then click **Refresh**.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Step 4 Referring to Table 5-51, provision the trunk port (Port 5) TCA thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low.

Note Do not modify the Laser Bias parameters.

Table 5-51 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_LTrunk Port TCA Thresholds

Card	TCA RX Power High	TCA RX Power Low	TCA TX Power High	TCA TX Power Low
MXP_2.5G_10G	–8 dBm	–22 dBm	7 dBm	–1 dBm
MXP_2.5G_10E	–9 dBm	–18 dBm	9 dBm	0 dBm
MXP_2.5G_10E_C	–9 dBm	–18 dBm	9 dBm	0 dBm
MXP_2.5G_10E_L	–9 dBm	–18 dBm	9 dBm	0 dBm

Step 5 Click **Apply**.

Step 6 Under Types, click the **Alarm** radio button and click **Refresh**.

Step 7 Referring to Table 5-52, provision the trunk port (Port 5) Alarm thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low.

Note Do not modify the Laser Bias parameters.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Table 5-52 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_LTrunk Port Alarm Thresholds

Card	Alarm RX Power High	Alarm RX Power Low	Alarm TX Power High	Alarm TX Power Low
MXP_2.5G_10G	–8 dBm	–24 dBm	4 dBm	2 dBm
MXP_2.5G_10E	–8 dBm	–20 dBm	7 dBm	3 dBm
MXP_2.5G_10E_C	–8 dBm	–20 dBm	7 dBm	3 dBm
MXP_2.5G_10E_L	–8 dBm	–20 dBm	7 dBm	3 dBm

Step 8 Click **Apply**.

Step 9 Return to your originating procedure (NTP).

DLP-G304 Provision the 4x2.5G Muxponder Client Port Alarm and TCA Thresholds

Purpose	This task provisions the client port alarm and TCA thresholds for the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G278 Provision the Optical Line Rate, page 5-11 DLP-G46 Log into CTC, page 2-27
Required/As Needed	Required
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L card where you want to change the client port alarm and TCA settings.

Step 2 Click the **Provisioning > Optics Thresholds** tabs. The TCA thresholds are shown by default.

Step 3 Referring to Table 5-53, provision the client Port *N* (where *N* = 1 through 4) TCA thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low based on the client interface at the other end.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Note Do not modify the Laser Bias parameters.

Note The hardware device that plugs into a TXP, MXP, GE_XP, 10GE_XP, or ADM-10G card faceplate to provide a fiber interface to the card is called a Small Form-factor Pluggable (SFP or XFP). In CTC, SFPs and XFPs are called pluggable port modules (PPMs). SFPs/XFPs are hot-swappable input/output devices that plug into a port to link the port with the fiber-optic network. Multirate PPMs have provisionable port rates and payloads. For more information about SFPs and XFPs, refer to the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual.*

Table 5-53 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Card Client Interfaces TCA Thresholds

Port Type (by CTC)	Pluggable Port Module (SFP)	TCA RX Power High	TCA RX Power Low	TCA TX Power High	TCA TX Power Low
OC-48	ONS-SE-2G-S1	–3	–18	3	–16
	15454-SFP-OC48-IR	0	–18	6	–11

Table 5-53 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Card Client Interfaces TCA Thresholds (continued)

Port Type (by CTC)	Pluggable Port Module (SFP)	TCA RX Power High	TCA RX Power Low	TCA TX Power High	TCA TX Power Low
STM-16	ONS-SE-2G-S1	–3	–18	3	–16
	15454E-SFP-L.16.1	0	–18	6	–11

Step 4 Repeat Step 3 to provision each additional client port.

Step 5 Under Types, click the **Alarm** radio button and click **Refresh**.

Step 6 Referring to Table 5-54, provision the client Port *N* (where *N* = 1 through 4) Alarm thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low based on the client interface that is provisioned.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Note Do not modify the Laser Bias parameters.

Table 5-54 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Card Client Interfaces Alarm Thresholds

Port Type (by CTC)	Pluggable Port Module (SFP)	Alarm RX Power High	Alarm RX Power Low	Alarm TX Power High	Alarm TX Power Low
OC-48	ONS-SE-2G-S1	0	–21	0	–13
	15454-SFP-OC48-IR	3	–21	3	–8
STM-16	ONS-SE-2G-S1	0	–21	0	–13
	15454E-SFP-L.16.1	3	–21	3	–8

Step 7 Click **Apply**.

Step 8 Repeat Steps 6 and 7 to provision each additional client port.

Step 9 Return to your originating procedure (NTP).

DLP-G228 Change the 4x2.5G Muxponder Line OTN Settings

Purpose	This task changes the line OTN settings for MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, and MXP_2.5G_10E_L muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L card where you want to change the line OTN settings.

Step 2 Click the **Provisioning > OTN** tabs, then choose one of the following subtabs: **OTN Lines**, **OTN G.709 Thresholds**, **FEC Thresholds**, or **Trail Trace Identifier**.

Step 3 Modify any of the settings described in Tables 5-55 through 5-58.

Note You must modify Near End and Far End independently, 15 Min and 1 Day independently, and SM and PM independently. To do so, choose the appropriate radio button and click **Refresh**.

Table 5-55 describes the values on the Provisioning > OTN > OTN Lines tab.

Note In Table 5-55, some parameter tabs or values do not always apply to all MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L cards. If the tabs or values do not apply, they do not appear in CTC.

Table 5-55 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Card Line OTN Settings

Parameter	Description	Options
Port	(Display only) Displays the port number.	5 (Trunk)
G.709 OTN	Sets the OTN lines according to ITU-T G.709.	• Enable • Disable
FEC	Sets the OTN line FEC mode. FEC mode can be Disabled or Enabled. With the MXP_2.5G_10E card, Enhanced FEC (E-FEC) mode can be enabled to provide greater range and lower bit error rate. E-FEC applies only to the MXP_2.5G_10E card.	• Enable—(MXP_2.5G_10G only) FEC is on. • Disable—FEC is off. • Standard—(MXP_2.5G_10E only) FEC is on. • Enhanced—(MXP_2.5G_10E only) Enhanced FEC is on.

Table 5-55 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Card Line OTN Settings (continued)

Parameter	Description	Options
SD BER	Sets the signal degrade bit error rate.	• 1E-5 • 1E-6 • 1E-7 • 1E-8 • 1E-9
SF BER	(Display only) Sets the signal fail bit error rate.	• 1E-5
Asynch/Synch Mapping	(MXP_2.5G_10E only) The MXP_2.5G_10E can perform standard ODU multiplexing according to ITU-T G.709. The card uses this to aggregate the four OC-48 client signals.	• ODU Multiplex

Table 5-56 describes the values on the Provisioning > OTN > OTN G.709 Thresholds tab.

Table 5-56 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L ITU-T G.709 Threshold Settings

Parameter	Description	Options
Port	(Display only) Port number	5 (Trunk)
ES	Errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**. **Note** SM (OTUk) is the ITU-T G.709 optical channel transport unit order of k overhead frame used for management and performance monitoring. PM (ODUk) is the ITU-T G.709 optical channel data unit order of k overhead frame unit used for path performance monitoring.

Table 5-56 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L ITU-T G.709 Threshold Settings (continued)

Parameter	Description	Options
SES	Severely errored seconds. Two types of thresholds can be asserted. Selecting the SM (OTUk) radio button selects FEC, overhead management, and PM using OTUk. Selecting the PM radio button selects path PM using ODUk.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**.
UAS	Unavailable seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**.
BBE	Background block errors	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**.
FC	Failure counter	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**.

Table 5-57 describes the values on the Provisioning > OTN > FEC Thresholds tab.

Table 5-57 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L FEC Threshold Settings

Parameter	Description	Options
Port	(Display only) Displays the port number.	5 (Trunk)

Table 5-57 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L FEC Threshold Settings (continued)

Parameter	Description	Options
Bit Errors Corrected	Displays the number of bit errors corrected during the interval selected. The interval can be set for 15 minutes or one day.	Numeric
Uncorrectable Words	Displays the number of uncorrectable words during the interval selected. The interval can be set for 15 minutes or one day.	Numeric

Table 5-58 describes the values on the Provisioning > OTN > Trail Trace Identifier tab.

Table 5-58 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Trail Trace Identifier Settings

Parameter	Description	Options
Port	Sets the port number. The trail trace identifier is applicable only to the trunk interface, which handles ITU-T G.709 frames.	5 (Trunk)
Level	Sets the level.	• Section • Path
Received Trace Mode	Sets the trace mode.	• Off/None • Manual
Disable FDI on TTIM	If a Trace Identifier Mismatch on Section overhead alarm arises because of a J0 overhead string mismatch, no Forward Defect Indication (FDI) signal is sent to the downstream nodes if this box is checked.	• Checked (FDI on TTIM is disabled) • Unchecked (FDI on TTIM is not disabled)
Transmit	Displays the current transmit string; sets a new transmit string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size; trail trace identifier is 64 bytes in length.
Expected	Displays the current expected string; sets a new expected string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size

Table 5-58 MXP_2.5G_10G, MXP_2.5G_10E, MXP_2.5G_10E_C, or MXP_2.5G_10E_L Trail Trace Identifier Settings (continued)

Parameter	Description	Options
Received	(Display only) Displays the current received string. You can click Refresh to manually refresh this display, or check the Auto-refresh every 5 sec box to keep this panel updated.	String of trace string size
Auto-refresh	If checked, automatically refreshes the display every 5 minutes.	Checked/unchecked (default)

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

NTP-G99 Modify the 2.5G Data Muxponder Card Line Settings and PM Parameter Thresholds

Purpose	This procedure changes the line and threshold settings for the MXP_MR_2.5G and MXPP_MR_2.5G muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	NTP-G179 Install the TXP, MXP, GE_XP, 10GE_XP, and ADM-10G Cards, page 3-55 DLP-G63 Install an SFP or XFP, page 3-57 DLP-G277 Provision a Multirate PPM, page 5-8 (if necessary) DLP-G278 Provision the Optical Line Rate, page 5-11 (if necessary)
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Complete the "DLP-G46 Log into CTC" task on page 2-27 at the node where you want to change the muxponder card settings. If you are already logged in, proceed to Step 2.

Step 2 As needed, complete the "NTP-G103 Back Up the Database" procedure on page 13-2 to preserve the existing transmission settings.

Step 3 Perform any of the following tasks as needed:

- DLP-G236 Change the 2.5G Data Muxponder Client Line Settings, page 5-103
- DLP-G237 Change the 2.5G Data Muxponder Distance Extension Settings, page 5-106
- DLP-G238 Change the 2.5G Data Muxponder SONET (OC-48)/SDH (STM-16) Settings, page 5-108
- DLP-G239 Change the 2.5G Data Muxponder Section Trace Settings, page 5-110

- DLP-G240 Change the 2.5G Data Muxponder SONET or SDH Line Thresholds, page 5-112
- DLP-G321 Change the 2.5G Data Muxponder Line Thresholds for 1G Ethernet or 1G FC/FICON Payloads, page 5-115
- DLP-G307 Provision the 2.5G Data Muxponder Trunk Port Alarm and TCA Thresholds, page 5-117
- DLP-G308 Provision the 2.5G Data Muxponder Client Port Alarm and TCA Thresholds, page 5-118
- DLP-G370 Change the 2.5G Data Muxponder Trunk Wavelength Settings, page 5-111

Note To use the Alarm Profiles tab, including creating alarm profiles and suppressing alarms, see Chapter 9, "Manage Alarms."

Stop. You have completed this procedure.

DLP-G236 Change the 2.5G Data Muxponder Client Line Settings

Purpose	This task changes the client line settings for MXP_MR_2.5G and MXPP_MR_2.5G muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_2.5G or MXPP_MR_2.5G card where you want to change the line settings.

Step 2 Click the **Provisioning > Line > Client** tabs. Tabs and parameter selections vary according to PPM provisioning.

Note The hardware device that plugs into a TXP, MXP, GE_XP, 10GE_XP, or ADM-10G card faceplate to provide a fiber interface to the card is called a Small Form-factor Pluggable (SFP or XFP). In CTC, SFPs and XFPs are called pluggable port modules (PPMs). SFPs/XFPs are hot-swappable input/output devices that plug into a port to link the port with the fiber-optic network. Multirate PPMs have provisionable port rates and payloads. For more information about SFPs and XFPs, refer to the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual*.

Step 3 Modify any of the settings for the Client tab as described in Table 5-59.

Table 5-59 MXP_MR_2.5G or MXPP_MR_2.5G Card Client Settings

Parameter	Description	Options
Port	(Display only) Port number.	• 1 • 2
Port Name	The user can assign a logical name for each of the ports shown by filling in this field.	User-defined. Name can be up to 32 alphanumeric/special characters. Blank by default. See the "DLP-G104 Assign a Name to a Port" task on page 7-3. **Note** You can provision a string (port name) for each fiber channel/FICON interface on the MXP_MR_2.5G and MXPP_MR_2.5G cards, which allows the MDS Fabric Manager to create a link association between that SAN port and a SAN port on a Cisco MDS 9000 switch.
Admin State	Sets the port service state unless network conditions prevent the change. For more information about administrative states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS (ANSI) or Unlocked (ETSI) • OOS,DSBLD (ANSI) or Locked,disabled (ETSI) • OOS,MT (ANSI) or Locked,maintenance (ETSI)
Service State	Identifies the autonomously generated state that gives the overall condition of the port. Service states appear in the format: Primary State-Primary State Qualifier, Secondary State. For more information about service states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS-NR (ANSI) or Unlocked-enabled (ETSI) • OOS-AU,AINS (ANSI) or Unlocked-disabled, automaticInService (ETSI) • OOS-MA,DSBLD (ANSI) or Locked-enabled,disabled (ETSI) • OOS-MA,MT (ANSI) or Locked-enabled,maintenance (ETSI)
ALS Mode	Sets the ALS function.	• Disabled (default): ALS is off; the laser is not automatically shut down when traffic outages (LOS) occur. • Auto Restart: (MXP_MR_2.5G only) ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. It automatically restarts when the conditions that caused the outage are resolved. • Manual Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. However, the laser must be manually restarted when conditions that caused the outage are resolved. • Manual Restart for Test: Manually restarts the laser for testing.

Table 5-59 MXP_MR_2.5G or MXPP_MR_2.5G Card Client Settings (continued)

Parameter	Description	Options
Reach	Displays the optical reach distance of the client port.	The reach distances that appear in the drop-down list depend on the card: • Autoprovision—The system to automatically provision the reach from the pluggable port module (PPM) reach value on the hardware. • SX—Short laser wavelength on multimode fiber optic cable for a maximum length of 550 meters. The operating wavelength range is 770-860 nm. • LX—Long wavelength for a long haul fiber optic cable for a maximum length of 10 km. The operating wavelength range is 1270-1355 nm. • CX—Two pairs of 150-ohm shielded twisted pair cable for a maximum length of 25 meters. • T—Four pairs of Category 5 Unshielded Twisted Pair cable for a maximum length of 100 meters. • DX—Single mode up to 40 km. The operating wavelength range is 1430-1580 nm. • HX—Single mode up to 40 km. The operating wavelength range is 1280-1335 nm. • ZX—Extended wavelength single-mode optical fiber for up to 100 km. The operating wavelength range is 1500-1580 nm. • VX—Single mode up to 100 km. The operating wavelength range is 1500-1580 nm.
Wavelength	Displays the wavelength of the client port.	• First Tunable Wavelength • Further wavelengths:850 nm through 1560.61 nm; 100-GHz ITU spacing; CWDM spacing

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G237 Change the 2.5G Data Muxponder Distance Extension Settings

Purpose	This task changes the distance extension settings for MXP_MR_2.5G and MXPP_MR_2.5G muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note Distance extension settings can be changed only if the facilities are out of service (OOS).

Note The distance extension parameters only apply to client ports (Ports 1 to 8) and not to the trunk ports (Port 9 for MXP_MR_2.5G card or Ports 9 and 10 for the MXPP_MR_2.5G card).

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_2.5G or MXPP_MR_2.5G card where you want to change the distance extension settings.

Step 2 Click the **Provisioning > Line >** *Service* tabs, where *Service* is the service type provisioned on the Pluggable Port Modules tab, such as SONET (ANSI), SDH (ETSI), 1G Ethernet, and others.

Note The hardware device that plugs into a TXP, MXP, GE_XP, 10GE_XP, or ADM-10G card faceplate to provide a fiber interface to the card is called a Small Form-factor Pluggable (SFP or XFP). In CTC, SFPs and XFPs are called pluggable port modules (PPMs). SFPs/XFPs are hot-swappable input/output devices that plug into a port to link the port with the fiber-optic network. Multirate PPMs have provisionable port rates and payloads. For more information about SFPs and XFPs, refer to the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual*

Step 3 Locate the Trunk port table row and verify that the Service State column value is OOS-MA,DSBLD (ANSI) or Locked-enabled,disabled (ETSI). If yes, continue with Step 4. If not, complete the following substeps:

a. Click the **Admin State** table cell and choose **OOS,MT** (ANSI) or **Locked,Maintenance** (ETSI).

b. Click **Apply**, then **Yes**.

Step 4 Click the **Provisioning > Line > Distance Extension** tabs. Tabs and parameter selections vary according to PPM provisioning.

Step 5 Modify any of the settings for the Distance Extension tab as described in Table 5-60.

Table 5-60 MXP_MR_2.5G or MXPP_MR_2.5G Card Line Distance Extension Settings

Parameter	Description	Options
Port	(Display only) Port number	• 1 • 2
Enable Distance Extension	Allows end-to-end distances of up to 1600 km for FC1G and up to 800 km for FC2G. If Distance Extension is enabled, set the connected Fibre Channel switches to Interop or Open Fabric mode, depending on the Fibre Channel switch. By default, the MXP_MR_2.5G and MXPP_MR_2.5G card will interoperate with the Cisco Multilayer Director Switch (MDS) storage products.	Checked or unchecked
Auto Detect Credits	Allows automatic detection of buffer credits for Fibre Channel flow control.	Checked or unchecked
Credits Available	(Display only) Displays the number of buffer credits available.	Numeric (range depends on the client equipment attached to the card)
Autoadjust GFP Buffer Threshold	Allows the threshold of the generic framing procedure (GFP) buffer between two MXP_MR_2.5G or two MXPP_MR_2.5G cards to be automatically adjusted.	Checked or unchecked
GFP Buffers Available	Displays the number of GFP buffers available between two MXP_MR_2.5G or two MXPP_MR_2.5G cards.	Numeric

Step 6 Click **Apply**.

Step 7 Return to your originating procedure (NTP).

DLP-G238 Change the 2.5G Data Muxponder SONET (OC-48)/SDH (STM-16) Settings

Purpose	This task changes the SONET (OC-48) or SDH (STM-16) settings for MXP_MR_2.5G and MXPP_MR_2.5G muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note SONET (OC-48)/SDH (STM-16) settings apply only to the trunk ports (Port 9 for the MXP_MR_2.5G card and Ports 9 and 10 for the MXPP_MR_2.5G card.)

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_2.5G or MXPP_MR_2.5G card where you want to change the OC-48/STM-64 settings.

Step 2 Click the **Provisioning > Line > SONET** (ANSI) or **SDH** (ETSI). Tabs and parameter selections vary according to PPM provisioning.

Step 3 Modify any of the settings for the SONET or SDH tab as described in Table 5-61.

Table 5-61 MXP_MR_2.5G or MXPP_MR_2.5G Card Line SONET or SDH Settings

Parameter	Description	Options
Port	(Display only) Port number.	9 (trunk for MXP_MR_2.5G) or 9 and 10 (trunks for MXPP_MR_2.5G)
Port Name	Provides the ability to assign the specified port a name.	User-defined. Name can be up to 32 alphanumeric/ special characters. Blank by default. See the "DLP-G104 Assign a Name to a Port" task on page 7-3.
Admin State	Sets the port service state unless network conditions prevent the change. For more information about administrative states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS (ANSI) or Unlocked (ETSI) • IS,AINS (ANSI) or Unlocked,automaticInService (ETSI) • OOS,DSBLD (ANSI) or Locked,disabled (ETSI) • OOS,MT (ANSI) or Locked,maintenance (ETSI)
Service State	(Display only) Identifies the autonomously generated state that gives the overall condition of the port. Service states appear in the format: Primary State-Primary State Qualifier, Secondary State. For more information about service states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS-NR (ANSI) or Unlocked-enabled (ETSI) • OOS-AU,AINS (ANSI) or Unlocked-disabled, automaticInService (ETSI) • OOS-MA,DSBLD (ANSI) or Locked-enabled,disabled (ETSI) • OOS-MA,MT (ANSI) or Locked-enabled,maintenance (ETSI)

Table 5-61 MXP_MR_2.5G or MXPP_MR_2.5G Card Line SONET or SDH Settings (continued)

Parameter	Description	Options
SF BER[1]	Sets the signal fail bit error rate.	• 1E-3 • 1E-4 • 1E-5
SD BER[1]	Sets the signal degrade bit error rate.	• 1E-5 • 1E-6 • 1E-7 • 1E-8 • 1E-9
ALS Mode	Sets the ALS function mode. The DWDM transmitter supports ALS according to ITU-T G.644 (06/99). ALS can be disabled or can be set for one of three mode options.	• Disable (default): ALS is off; the laser is not automatically shut down when traffic outages (LOS) occur. • Auto Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. It automatically restarts when the conditions that caused the outage are resolved. • Manual Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. However, the laser must be manually restarted when conditions that caused the outage are resolved. • Manual Restart for Test: Manually restarts the laser for testing.
AINS Soak	Sets the automatic in-service soak period. Double-click the time and use the up and down arrows to change settings.	• Duration of valid input signal, in hh.mm format, after which the card becomes in service (IS) automatically • 0 to 48 hours, 15-minute increments
Type	The optical transport type.	• SONET (ANSI) • SDH (ETSI)
SyncMsgIn	Sets the EnableSync card parameter. Enables synchronization status messages (S1 byte), which allow the node to choose the best timing source.	Checked or unchecked
Send DoNotUse	Sets the Send DoNotUse card state. When checked, sends a DUS message on the S1 byte.	Checked or unchecked
ProvidesSync	Sets the ProvidesSync card parameter. If checked, the card is provisioned as an NE timing reference.	Checked or unchecked

1. SF BER and SD BER thresholds apply only to trunk ports (Port 9 for MXP_MR_2.5G and Ports 9 and 10 for MXPP_MR_2.5G).

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G239 Change the 2.5G Data Muxponder Section Trace Settings

Purpose	This task changes the section trace settings for MXP_MR_2.5G and MXPP_MR_2.5G muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_2.5G or MXPP_MR_2.5G card where you want to change the section trace settings.

Step 2 Click the **Provisioning > Line > Section Trace** tabs. Tabs and parameter selections vary according to PPM provisioning.

Note The hardware device that plugs into a TXP, MXP, GE_XP, 10GE_XP, or ADM-10G card faceplate to provide a fiber interface to the card is called a Small Form-factor Pluggable (SFP or XFP). In CTC, SFPs and XFPs are called pluggable port modules (PPMs). SFPs/XFPs are hot-swappable input/output devices that plug into a port to link the port with the fiber-optic network. Multirate PPMs have provisionable port rates and payloads. For more information about SFPs and XFPs, refer to the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual.*

Step 3 Modify any of the settings in the Section Trace tab as described in Table 5-62.

Table 5-62 MXP_MR_2.5G or MXPP_MR_2.5G Card Line Section Trace Settings

Parameter	Description	Options
Port	(Display only) Port number.	• 9 (trunk port for MXP_MR_2.5G) • 9 and 10 (trunk ports for MXPP_MR_2.5G)
Received Trace Mode	Sets the received trace mode.	• Off/None • Manual
Disable AIS/RDI on TIM-S	If an TIM on Section overhead alarm arises because of a J0 overhead string mismatch, no alarm indication signal is sent to downstream nodes if this box is checked.	• Checked (AIS/RDI on TIM-S is disabled) • Unchecked (AIS/RDI on TIM-S is not disabled)
Transmit Section Trace String Size	Sets the trace string size.	• 1 byte • 16 byte

Table 5-62 MXP_MR_2.5G or MXPP_MR_2.5G Card Line Section Trace Settings (continued)

Parameter	Description	Options
Transmit	Displays the current transmit string; sets a new transmit string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Expected	Displays the current expected string; sets a new expected string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Received	(Display only) Displays the current received string. You can click Refresh to manually refresh this display, or check the Auto-refresh every 5 sec check box to keep this panel updated.	String of trace string size
Auto-refresh	If checked, automatically refreshes the display every 5 seconds.	Checked/unchecked (default)

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G370 Change the 2.5G Data Muxponder Trunk Wavelength Settings

Purpose	This task changes the trunk wavelength settings for the MXP_MR_2.5G and MXPP_MR_2.5G.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_2.5G or MXPP_MR_2.5G card where you want to change the trunk wavelength settings.

Step 2 Click the **Provisioning > Line > Wavelength Trunk Settings** tabs.

Step 3 Modify any of the settings as described in Table 5-63.

Table 5-63 MXP_MR_2.5G or MXPP_MR_2.5G Card Wavelength Trunk Settings

Parameter	Description	Options
Port	(Display only) Displays the port number.	9 (Trunk) 10 (Trunk) (MXPP_MR_2.5G only)
Band	(Display only) Indicates the wavelength band that can be provisioned.	C—Only the C band is available
Even/Odd	Sets the wavelengths available for provisioning. This field does not apply to MXP_MR_2.5G or MXPP_MR_2.5G cards	—
Wavelength	The wavelength provisioned for the trunk.	• First Tunable Wavelength • Further wavelengths in 100-GHz ITU-T, C-band spacing. If the card is installed, the wavelengths it carries are identified with two asterisks. Other wavelengths have a dark grey background. If the card is not installed, all wavelengths appear with a dark grey background.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G240 Change the 2.5G Data Muxponder SONET or SDH Line Thresholds

Purpose	This task changes the SONET or SDH line threshold settings for MXP_MR_2.5G and MXPP_MR_2.5G muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_2.5G or MXPP_MR_2.5G card where you want to change the line threshold settings.

Step 2 Click the **Provisioning > Line Thresholds > SONET Thresholds** (ANSI) or **SDH Thresholds** (ETSI) tabs.

Step 3 Modify any of the settings as shown in Table 5-64.

Note You must modify Near End and Far End independently, 15 Min and 1 Day independently, and Line and Section independently. To do so, choose the appropriate radio button and click **Refresh**.

Note In Table 5-64, some parameters or options do not apply to all MXP_MR_2.5G or MXPP_MR_2.5G cards. If the parameters or options do not apply, they do not appear in CTC.

Table 5-64 MXP_MR_2.5G or MXPP_MR_2.5G Card Line Threshold Settings

Field	Description	ONS 15454 Options	ONS 15454 SDH Options
Port	(Display only) Port number	• 9 (MXP_MR_2.5G) • 9 and 10 (MXPP_MR_2.5G)	• 9 (MXP_MR_2.5G) • 9 and 10 (MXPP_MR_2.5G)
EB	Path Errored Block indicates that one or more bits are in error within a block	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
CV	Coding violations	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
ES	Errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
SES	Severely errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.

Table 5-64 MXP_MR_2.5G or MXPP_MR_2.5G Card Line Threshold Settings (continued)

Field	Description	ONS 15454 Options	ONS 15454 SDH Options
BBE	Background block errors	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—SM (OTUk) or PM (ODUk) Choose an option in each category and click **Refresh**.
SEFS	(Section or Regeneration Section only) Severely errored framing seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Section only Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Regeneration Section (only) Choose an option in each category and click **Refresh**.
FC	(Line or Multiplex Section only) Failure count	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Section only Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Regeneration Section (only) Choose an option in each category and click **Refresh**.
UAS	(Line or Multiplex Section only) Unavailable seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Section only Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Regeneration Section (only) Choose an option in each category and click **Refresh**.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G321 Change the 2.5G Data Muxponder Line Thresholds for 1G Ethernet or 1G FC/FICON Payloads

Purpose	This task changes the line threshold settings for MXP_MR_10G and MXPP_MR_2.5G transponder cards carrying the 1G Ethernet or 1G FC/FICON payloads.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Display the MXP_MR_2.5G or MXPP_MR_2.5G card where you want to change the line threshold settings in card view.

Step 2 Click the **Provisioning > Line Thresholds > RMON Thresholds** tabs.

Step 3 Click **Create**. The Create Threshold dialog box appears.

Step 4 From the Port drop-down list, choose the applicable port.

Step 5 From the Variable drop-down list, choose an Ethernet variable. See Table 5-65 for a list of available Ethernet variables.

Table 5-65 MXP_MR_2.5G and MXPP_MR 2.5G Card 1G Ethernet or 1G FC/FICON Variables

Variable	Description
ifInOctets	Number of bytes received since the last counter reset.
rxTotalPkts	Total number of receive packets.
ifInDiscards	Number of inbound packets that were chosen to be discarded even though no errors had been detected to prevent their being deliverable to a higher-layer protocol.
ifInErrors	Total number of receive errors.
ifOutOctets	The total number of octets transmitted out of the interface, including framing characters.
txTotalPkts	Total number of transmitted packets.
ifOutDiscards	Number of outbound packets that were chosen to be discarded even though no errors had been detected to prevent their being transmitted.
mediaIndStatsRxFramesTruncated	Total number of frames received that are less than 5 bytes. This value is a part of high-level data link control (HDLC) and GFP port statistics.
mediaIndStatsRxFramesTooLong	Number of received frames that exceed the maximum transmission unit (MTU). This value is part of HDLC and GFP port statistics.
mediaIndStatsRxFramesBadCRC	Number of receive data frames with payload cyclic redundancy check (CRC) errors when HDLC framing is used.

Table 5-65 MXP_MR_2.5G and MXPP_MR 2.5G Card 1G Ethernet or 1G FC/FICON Variables (continued)

mediaIndStatsTxFramesBadCRC	Number of transmitted data frames with payload CRC errors when HDLC framing is used.
fcStatsLinkRecoveries	Number of link recoveries.
fcStatsZeroTxCredits	Number of transmit attempts that failed because of unavailable credits.
8b10bInvalidOrderedSets	Number of 8b10b disparity violations on the Fibre Channel line side.
8b10bStatsEncodingDispErrors	Number of 8b10b disparity violations on the Fibre Channel line side.

Step 6 From the Alarm Type drop-down list, indicate whether the event will be triggered by the rising threshold, the falling threshold, or both the rising and falling thresholds.

Step 7 From the Sample Type drop-down list, choose either **Relative** or **Absolute**. Relative restricts the threshold to use the number of occurrences in the user-set sample period. Absolute sets the threshold to use the total number of occurrences, regardless of time period.

Step 8 Type in an appropriate number of seconds for the Sample Period.

Step 9 Type in the appropriate number of occurrences for the Rising Threshold.

For a rising type of alarm, the measured value must move from below the falling threshold to above the rising threshold. For example, if a network is running below a rising threshold of 1000 collisions every 15 seconds and a problem causes 1001 collisions in 15 seconds, the excess occurrences trigger an alarm.

Step 10 Enter the appropriate number of occurrences in the Falling Threshold field. In most cases a falling threshold is set lower than the rising threshold.

A falling threshold is the counterpart to a rising threshold. When the number of occurrences is above the rising threshold and then drops below a falling threshold, it resets the rising threshold. For example, when the network problem that caused 1001 collisions in 15 seconds subsides and creates only 799 collisions in 15 seconds, occurrences fall below a falling threshold of 800 collisions. This resets the rising threshold so that if network collisions again spike over a 1000 per 15-second period, an event again triggers when the rising threshold is crossed. An event is triggered only the first time a rising threshold is exceeded (otherwise, a single network problem might cause a rising threshold to be exceeded multiple times and cause a flood of events).

Step 11 Click **OK**.

Step 12 Return to your originating procedure (NTP).

DLP-G307 Provision the 2.5G Data Muxponder Trunk Port Alarm and TCA Thresholds

Purpose	This task changes the MXP_MR_2.5G and MXPP_MR_2.5G trunk port alarm and TCA thresholds.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note Throughout this task, trunk port refers to Port 9 (MXP_MR_2.5G and MXPP_MR_2.5G) and Port 10 (MXPP_MR_2.5G only).

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_2.5G or MXPP_MR_2.5G card where you want to change the trunk port alarm and TCA settings.

Step 2 Click the **Provisioning > Optics Thresholds** tabs.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Step 3 Provision the trunk port TCA thresholds for RX Power High to –9 dBm and for RX Power Low to –23 dBm.

Step 4 Under Types, click the **Alarm** radio button and click **Refresh**.

Note Do not modify the Laser Bias parameters.

Step 5 Provision the trunk port Alarm thresholds for RX Power High to –7 dBm and for RX Power Low to –26 dBm.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Step 6 Click **Apply**.

Step 7 Return to your originating procedure (NTP).

DLP-G308 Provision the 2.5G Data Muxponder Client Port Alarm and TCA Thresholds

Purpose	This task provisions the client port alarm and TCA thresholds for the MXP_MR_2.5G and MXPP_MR_2.5G cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G278 Provision the Optical Line Rate, page 5-11 DLP-G46 Log into CTC, page 2-27
Required/As Needed	Required
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_2.5G or MXPP_MR_2.5G card where you want to change the client port alarm and TCA settings.

Step 2 Click the **Provisioning > Optics Thresholds** tabs. The TCA thresholds are shown by default.

Step 3 Referring to Table 5-66, provision the client port (Ports 1 through 8) TCA thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low based on the client interface at the other end.

Note Do not modify the Laser Bias parameters.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Note The hardware device that plugs into a TXP, MXP, GE_XP, 10GE_XP, or ADM-10G card faceplate to provide a fiber interface to the card is called a Small Form-factor Pluggable (SFP or XFP). In CTC, SFPs and XFPs are called pluggable port modules (PPMs). SFPs/XFPs are hot-swappable input/output devices that plug into a port to link the port with the fiber-optic network. Multirate PPMs have provisionable port rates and payloads. For more information about SFPs and XFPs, refer to the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual.*

Table 5-66 MXP_MR_2.5G and MXPP_MR_2.5G Card Client Interface TCA Thresholds

Port Type (by CTC)	Pluggable Port Module (XFP)	TCA RX Power Low	TCA RX Power High	TCA TX Power Low	TCA TX Power High
FC1G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–17	0	–16	3
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–20	–3	–16	3

Table 5-66 MXP_MR_2.5G and MXPP_MR_2.5G Card Client Interface TCA Thresholds (continued)

Port Type (by CTC)	Pluggable Port Module (XFP)	TCA RX Power Low	TCA RX Power High	TCA TX Power Low	TCA TX Power High
FC2G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–15	0	–16	3
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–20	–3	–16	3
FICON1G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–17	0	–16	3
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–20	–3	–16	3
FICON2G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–17	0	–16	3
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–20	–3	–16	3
ONE_GE	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–17	0	–16	3
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–20	–3	–16	3
ESCON	ONS-SE-200-MM	–21	–14	–32	–11

Step 4 Click **Apply**.

Step 5 Repeat Steps 3 and 4 to provision each additional client port.

Step 6 Under Types, click the **Alarm** radio button and click **Refresh**.

Step 7 Referring to Table 5-67, provision the client port (Ports 1 through 8) Alarm thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low based on the client interface that is provisioned.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Table 5-67 MXP_MR_2.5G and MXPP_MR_2.5G Card Client Interface Alarm Thresholds

Port Type (by CTC)	Pluggable Port Module (XFP)	Alarm RX Power Low	Alarm RX Power High	Alarm TX Power Low	Alarm TX Power High
FC1G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–20	3	–13	–1
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
FC2G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–18	3	–13	–1
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
FICON1G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–20	3	–13	–1
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
FICON2G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–20	3	–13	–1
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
ONE_GE	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–20	3	–13	–1
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
ESCON	ONS-SE-200-MM	–24	–11	–35	–8

Step 8 Click **Apply**.

Step 9 Repeat Steps 7 and 8 to provision each additional client port. When you have finished provisioning client ports, continue with Step 10.

Step 10 Return to your originating procedure (NTP).

NTP-G148 Modify the 10G Data Muxponder Card Line Settings and PM Parameter Thresholds

Purpose	This procedure changes the line and threshold settings for the MXP_MR_10DME_C and MXP_MR_10DME_L muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	NTP-G179 Install the TXP, MXP, GE_XP, 10GE_XP, and ADM-10G Cards, page 3-55 DLP-G63 Install an SFP or XFP, page 3-57 DLP-G277 Provision a Multirate PPM, page 5-8 (if necessary) DLP-G278 Provision the Optical Line Rate, page 5-11 (if necessary)
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Complete the "DLP-G46 Log into CTC" task on page 2-27 at the node where you want to change the muxponder card settings. If you are already logged in, proceed to Step 2.

Step 2 As needed, complete the "NTP-G103 Back Up the Database" procedure on page 13-2 to preserve the existing transmission settings.

Step 3 Perform any of the following tasks as needed:

- DLP-G333 Change the 10G Data Muxponder Client Line Settings, page 5-122
- DLP-G334 Change the 10G Data Muxponder Distance Extension Settings, page 5-124
- DLP-G340 Change the 10G Data Muxponder Trunk Wavelength Settings, page 5-125
- DLP-G335 Change the 10G Data Muxponder SONET (OC-192)/SDH (STM-64) Settings, page 5-126
- DLP-G336 Change the 10G Data Muxponder Section Trace Settings, page 5-128
- DLP-G341 Change the 10G Data Muxponder SONET or SDH Line Thresholds, page 5-129
- DLP-G337 Change the 10G Data Muxponder Line RMON Thresholds for Ethernet, 1G FC/FICON, or ISC/ISC3 Payloads, page 5-131
- DLP-G338 Provision the 10G Data Muxponder Trunk Port Alarm and TCA Thresholds, page 5-134
- DLP-G339 Provision the 10G Data Muxponder Client Port Alarm and TCA Thresholds, page 5-135
- DLP-G366 Change the 10G Data Muxponder OTN Settings, page 5-138

Note To use the Alarm Profiles tab, including creating alarm profiles and suppressing alarms, see Chapter 9, "Manage Alarms."

Stop. You have completed this procedure.

DLP-G333 Change the 10G Data Muxponder Client Line Settings

Purpose	This task changes the line settings for the MXP_MR_10DME_C and MXP_MR_10DME_L muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_10DME_C or MXP_MR_10DME_L card where you want to change the line settings.

Step 2 Click the **Provisioning > Line > Client** tabs. Tabs and parameter selections vary according to PPM provisioning.

Step 3 Modify any of the settings for the Client tab as described in Table 5-68.

Table 5-68 MXP_MR_10DME_C or MXP_MR_10DME_L Card Line Client Settings

Parameter	Description	Options
Port	(Display only) Port number.	1 through 8
Port Name	The user can assign a logical name for each of the ports shown by filling in this field.	User-defined. Name can be up to 32 alphanumeric/ special characters. Blank by default. See the "DLP-G104 Assign a Name to a Port" task on page 7-3. **Note** You can provision a string (port name) for each fiber channel/FICON interface on the MXP_MR_10DME_C and MXP_MR_10DME_L cards, which allows the MDS Fabric Manager to create a link association between that SAN port and a SAN port on a Cisco MDS 9000 switch.
Admin State	Sets the port service state unless network conditions prevent the change. For more information about administrative states, refer to the Appendix B, "Administrative and Service States" in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS (ANSI) or Unlocked (ETSI) • OOS,DSBLD (ANSI) or Locked,disabled (ETSI) • OOS,MT (ANSI) or Locked,maintenance (ETSI)
Service State	(Display only) Identifies the autonomously generated state that gives the overall condition of the port. Service states appear in the format: Primary State-Primary State Qualifier, Secondary State. For more information about service states, refer to Appendix B, "Administrative and Service States" in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS-NR (ANSI) or Unlocked-enabled (ETSI) • OOS-AU,AINS (ANSI) or Unlocked-disabled, automaticInService (ETSI) • OOS-MA,DSBLD (ANSI) or Locked-enabled,disabled (ETSI) • OOS-MA,MT (ANSI) or Locked-enabled,maintenance (ETSI)

Table 5-68 MXP_MR_10DME_C or MXP_MR_10DME_L Card Line Client Settings (continued)

Parameter	Description	Options
ALS Mode	Sets the ALS function mode.	• Disabled (default): ALS is off; the laser is not automatically shut down when traffic outages (LOS) occur. • Manual Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. However, the laser must be manually restarted when conditions that caused the outage are resolved. • Manual Restart for Test: Manually restarts the laser for testing.
Reach	Sets the optical reach distance of the client port.	The reach distances that appear in the drop-down list depend on the card: • Autoprovision—The system to automatically provision the reach from the pluggable port module (PPM) reach value on the hardware. • SX—Short laser wavelength on multimode fiber optic cable for a maximum length of 550 meters. The operating wavelength range is 770-860 nm.) • LX—Long wavelength for a long haul fiber optic cable for a maximum length of 10 km. The operating wavelength range is 1270-1355 nm.) • CX—Two pairs of 150-ohm shielded twisted pair cable for a maximum length of 25 meters.) • T—Four pairs of Category 5 Unshielded Twisted Pair cable for a maximum length of 100 meters.) • DX—Single mode up to 40 km. The operating wavelength range is 1430-1580 nm.) • HX—Single mode up to 40 km. The operating wavelength range is 1280-1335 nm.) • ZX—Extended wavelength single-mode optical fiber for up to 100 km. The operating wavelength range is 1500-1580 nm.) • VX—Single mode up to 100 km. The operating wavelength range is 1500-1580 nm.)
Wavelength	Displays the wavelength of the client port.	• First Tunable Wavelength • Further wavelengths: 850 nm through 1560.61 nm 100-GHz ITU spacing CWDM spacing
Squelch	Shuts down the far-end laser in response to certain defects. (Squelch does not apply to ISC COMPACT payloads.)	• Squelch • Disable

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G334 Change the 10G Data Muxponder Distance Extension Settings

Purpose	This task changes the distance extension settings for the MXP_MR_10DME_C and MXP_MR_10DME_L muxponder card ports provisioned for Fibre Channel or FICON payloads.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note The distance extension parameters only apply to client ports (Ports 1 to 8) and not to the trunk port (Port 9).

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_10DME_C or MXP_MR_10DME_L card where you want to change the distance extension settings.

Step 2 Click the **Provisioning > Line > Distance Extension** tabs.

Step 3 Modify any of the settings as described in Table 5-69.

Table 5-69 MXP_MR_10DME_C or MXP_MR_10DME_L Card Line Distance Extension Settings

Parameter	Description	Options
Port	(Display only) Port number. Up to eight ports might appear based on the number of pluggable port modules that are provisioned.	—
Enable Distance Extension	Allows end-to-end distances of up to 1600 km for FC1G and up to 800 km for FC2G. If Distance Extension is enabled, set the connected Fibre Channel switches to Interop or Open Fabric mode, depending on the Fibre Channel switch. By default, the MXP_MR_10DME_C and MXP_MR_10DME_L card will interoperate with the Cisco MDS storage products.	• Checked—Distance extension is enabled. • Unchecked—Distance extension is not enabled.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G340 Change the 10G Data Muxponder Trunk Wavelength Settings

Purpose	This task changes the trunk wavelength settings for the MXP_MR_10DME_C and MXP_MR_10DME_L.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_10DME_C or MXP_MR_10DME_L card where you want to change the trunk wavelength settings.

Step 2 Click the **Provisioning > Line > Wavelength Trunk Settings** tabs.

Step 3 Modify any of the settings for the Wavelength Trunk Settings tab as described in Table 5-70.

Table 5-70 MXP_MR_10DME_C or MXP_MR_10DME_L Card Wavelength Trunk Settings

Parameter	Description	Options
Port	(Display only) Displays the port number.	Port 9 (Trunk)
Band	Indicates the wavelength band that can be provisioned. The field is display-only when a physical MXP_MR_10DME_C or MXP_MR_10DME_L is installed. If the card is provisioned in CTC only, you can provision the band for the card that will be installed.	• C—The C-band wavelengths are available in the Wavelength field. • L—The L-band wavelengths are available in the Wavelength field.
Even/Odd	Sets the wavelengths available for provisioning.	• Even—Displays even C-band or L-band wavelengths in the Wavelength field. • Odd—Displays odd C-band or L-band wavelengths in the Wavelength field.
Wavelength	The wavelength provisioned for the trunk.	• First Tunable Wavelength • Further wavelengths in 100-GHz ITU spacing

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G335 Change the 10G Data Muxponder SONET (OC-192)/SDH (STM-64) Settings

Purpose	This task changes the OC-192 (ANSI)/STM-64 (ETSI) settings for the MXP_MR_10DME_C and MXP_MR_10DME_L muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_10DME_C or MXP_MR_10DME_L card where you want to change the SONET (OC-192)/SDH (STM-64) settings.

Step 2 Click the **Provisioning > Line > SONET** (ANSI) or **SDH** (ETSI). Tabs and parameter selections vary according to PPM provisioning.

Step 3 Modify any of the settings as described in Table 5-71.

Table 5-71 MXP_MR_10DME_C or MXP_MR_10DME_L Card Line SONET or SDH Settings

Parameter	Description	Options
Port	(Display only) Port number.	9 (Trunk)
Port Name	Provides the ability to assign the specified port a name.	User-defined. Name can be up to 32 alphanumeric/ special characters. Blank by default. See the "DLP-G104 Assign a Name to a Port" task on page 7-3.
Admin State	Sets the port service state unless network conditions prevent the change. For more information about administrative states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS (ANSI) or Unlocked (ETSI) • IS,AINS (ANSI) or Unlocked,automaticInService (ETSI) • OOS,DSBLD (ANSI) or Locked,disabled (ETSI) • OOS,MT (ANSI) or Locked,maintenance (ETSI)
Service State	(Display only) Identifies the autonomously generated state that gives the overall condition of the port. Service states appear in the format: Primary State-Primary State Qualifier, Secondary State. For more information about service states, refer to the "Administrative and Service States" appendix in the *Cisco ONS 15454 DWDM Reference Manual*.	• IS-NR (ANSI) or Unlocked-enabled (ETSI) • OOS-AU,AINS (ANSI) or Unlocked-disabled, automaticInService (ETSI) • OOS-MA,DSBLD (ANSI) or Locked-enabled,disabled (ETSI) • OOS-MA,MT (ANSI) or Locked-enabled,maintenance (ETSI)
SF BER[1]	Sets the signal fail bit error rate.	• 1E-3 • 1E-4 • 1E-5

Table 5-71 MXP_MR_10DME_C or MXP_MR_10DME_L Card Line SONET or SDH Settings (continued)

Parameter	Description	Options
SD BER[1]	Sets the signal degrade bit error rate.	• 1E-5 • 1E-6 • 1E-7 • 1E-8 • 1E-9
Type	The optical transport type.	• SONET (ANSI) • SDH (ETSI)
ALS Mode	Sets the ALS function mode. The DWDM transmitter supports ALS according to ITU-T G.644 (06/99). ALS can be disabled or can be set for one of three mode options.	• Disabled (default): ALS is off; the laser is not automatically shut down when traffic outages (LOS) occur. • Auto Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. It automatically restarts when the conditions that caused the outage are resolved. • Manual Restart: ALS is on; the laser automatically shuts down when traffic outages (LOS) occur. However, the laser must be manually restarted when conditions that caused the outage are resolved. • Manual Restart for Test: Manually restarts the laser for testing.
AINS Soak	Sets the automatic in-service soak period. Double-click the time and use the up and down arrows to change settings.	• Duration of valid input signal, in hh.mm format, after which the card becomes in service (IS) automatically • 0 to 48 hours, 15-minute increments
ProvidesSync	Sets the ProvidesSync card parameter. If checked, the card is provisioned as a NE timing reference.	Checked or unchecked
SyncMsgIn	Sets the EnableSync card parameter. Enables synchronization status messages (S1 byte), which allow the node to choose the best timing source.	Checked or unchecked
Send DoNotUse	Sets the Send DoNotUse card state. When checked, sends a DUS (do not use) message on the S1 byte.	Checked or unchecked

1. SF BER and SD BER thresholds apply only to trunk ports (Port 9 for MXP_MR_2.5G and Ports 9 and 10 for MXPP_MR_2.5G).

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G336 Change the 10G Data Muxponder Section Trace Settings

Purpose	This task changes the section trace settings for the MXP_MR_10DME_C and MXP_MR_10DME_L muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_10DME_C or MXP_MR_10DME_L card where you want to change the section trace settings.

Step 2 Click the **Provisioning > Line > Section Trace** tabs. Tabs and parameter selections vary according to PPM provisioning.

Step 3 Modify any of the settings in the Section Trace tab as described in Table 5-72.

Table 5-72 MXP_MR_10DME_C or MXP_MR_10DME_L Card Line Section Trace Settings

Parameter	Description	Options
Port	(Display only) Port number.	• 9 (trunk only)
Received Trace Mode	Sets the received trace mode.	• Off/None • Manual
Disable AIS/RDI on TIM-S	If a TIM on section overhead alarm arises because of a J0 overhead string mismatch, no alarm indication signal is sent to downstream nodes if this box is checked.	• Checked (AIS/RDI on TIM-S is disabled) • Unchecked (AIS/RDI on TIM-S is not disabled)
Transmit Section Trace String Size	Sets the trace string size.	• 1 byte • 16 byte
Transmit	Displays the current transmit string; sets a new transmit string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Expected	Displays the current expected string; sets a new expected string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Received	(Display only) Displays the current received string. You can click Refresh to manually refresh this display, or select the Auto-refresh every 5 sec check box to keep this panel updated.	String of trace string size
Auto-refresh	If checked, automatically refreshes the display every 5 seconds.	Checked/unchecked (default)

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G341 Change the 10G Data Muxponder SONET or SDH Line Thresholds

Purpose	This task changes the SONET or SDH line threshold settings for the MXP_MR_10DME_C and MXP_MR_10DME_L muxponder cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_10DME_C or MXP_MR_10DME_L card where you want to change the line threshold settings.

Step 2 Click the **Provisioning > Line Thresholds > SONET Thresholds** (ANSI) or **SDH Thresholds** (ETSI) tabs.

Step 3 Modify any of the settings as shown in Table 5-73.

Note You must modify Near End and Far End independently; 15 Min and 1 Day independently; and Line and Section independently. To do so, choose the appropriate radio button and click **Refresh**.

Note In Table 5-73, some parameters and options do not apply to all 4x2.5G muxponder cards. If the parameter or options do not apply, they do not appear in CTC.

Table 5-73 MXP_MR_10DME_C or MXP_MR_10DME_LCard Line Threshold Settings

Parameter	Description	Options - ONS 15454	Options - ONS 15454 SDH
Port	(Display only) Port number	• 9 (Trunk)	• 9 (Trunk)
EB	Path Errored Block indicates that one or more bits are in error within a block	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.

Table 5-73 MXP_MR_10DME_C or MXP_MR_10DME_LCard Line Threshold Settings (continued)

Parameter	Description	Options - ONS 15454	Options - ONS 15454 SDH
CV	Coding violations	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
ES	Errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
SES	Severely errored seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
SEFS	(Near End Section or Regeneration Section only) Severely errored framing seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
BBE	Background block errors	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.

Table 5-73 MXP_MR_10DME_C or MXP_MR_10DME_LCard Line Threshold Settings (continued)

Parameter	Description	Options - ONS 15454	Options - ONS 15454 SDH
FC	(Line or Multiplex Section only) Failure count	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.
UAS	(Line or Multiplex Section only) Unavailable seconds	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Line or Section (near end only) Choose an option in each category and click **Refresh**.	Numeric. Threshold display options include: • Direction—Near End or Far End • Interval—15 Min (minutes) or 1 day • Types—Multiplex Section or Regeneration Section (near end only) Choose an option in each category and click **Refresh**.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G337 Change the 10G Data Muxponder Line RMON Thresholds for Ethernet, 1G FC/FICON, or ISC/ISC3 Payloads

Purpose	This task changes the line threshold settings for MXP_MR_10DME_C and MXP_MR_10DME_L cards carrying Ethernet, FC/FICON, or ISC/ISC3 payloads.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), display the MXP_MR_10DME_C or MXP_MR_10DME_L card where you want to change the line threshold settings in card view.

Step 2 Click the **Provisioning > Line Thresholds > RMON Thresholds** tabs.

Step 3 Click **Create**. The Create Threshold dialog box appears.

Step 4 From the Port drop-down list, choose the applicable port, either the payload port, for example “1-1 (ONE_GE)”, or the equivalent ITU-T G.7041 GFP (Generic Frame Procedure) port.

Step 5 From the Variable drop-down list, choose an Ethernet, FC, FICON, or ISC variable. See Table 5-74 for a list of available Ethernet variables, Table 5-75 for a list of FC and FICON variables, and Table 5-76 for a list of ISC and ISC3 variables.

Table 5-74 MXP_MR_10DME_C or MXP_MR_10DME_L Ethernet Variables

Variable	Description
ifInOctets	Number of bytes received since the last counter reset.
rxTotalPkts	Total number of receive packets.
ifInErrors	Total number of receive errors.
ifOutOctets	The total number of octets transmitted out of the interface, including framing characters.
txTotalPkts	Total number of transmitted packets.
mediaIndStatsRxFramesTruncated	Total number of frames received that are less than 5 bytes. This value is a part of HDLC and GFP port statistics.
mediaIndStatsRxFramesTooLong	Number of received frames that exceed the MTU[1]. This value is part of HDLC and GFP port statistics.
mediaIndStatsRxFramesBadCRC	Number of receive data frames with payload CRC errors when HDLC framing is used.
mediaIndStatsTxFramesBadCRC	Number of transmitted data frames with payload CRC errors when HDLC framing is used.
8b10bInvalidOrderedSetsDispErrorsSum	Number of code violations/running disparity errors in the 8b/10b encoded characters received.

1. Frames larger than the MTU, including Jumbo frames, pass through. The MTU, however, is not specified by the user.

Table 5-75 MXP_MR_10DME_C or MXP_MR_10DME_L FC/FICON Variables

Variable	Description
ifInOctets	Number of bytes received since the last counter reset.
rxTotalPkts	Total number of receive packets.
ifInErrors	Total number of receive errors.
ifOutOctets	The total number of octets transmitted out of the interface, including framing characters.
txTotalPkts	Total number of transmitted packets.
ifOutOversizePkts	Total number of oversized packets output from the interface.
mediaIndStatsRxFramesTruncated	Total number of frames received that are less than 5 bytes. This value is a part of HDLC and GFP port statistics.
mediaIndStatsRxFramesTooLong	Number of received frames that exceed the MTU. This value is part of HDLC and GFP port statistics.
mediaIndStatsRxFramesBadCRC	Number of receive data frames with payload CRC errors when HDLC framing is used.
mediaIndStatsTxFramesBadCRC	Number of transmitted data frames with payload CRC errors when HDLC framing is used.

Table 5-75 MXP_MR_10DME_C or MXP_MR_10DME_L FC/FICON Variables (continued)

fcStatsZeroTxCredits	This is a count that increments when the FC/FICON Tx credits go from a non-zero value to zero.
fcStatsRxRecvrReady	Number of received RDY (Receive Ready) order set.
fcStatsTxRecvrReady	Number of transmitted RDY (Receive Ready) order set.
8b10bInvalidOrderedSetsDispErrorsSum	Number of Code Violations/Running Disparity errors in the 8b/10b encoded characters received

Table 5-76 MXP_MR_10DME_C or MXP_MR_10DME_L ISC and ISC3Variables

Variable	Description
ifInOctets	Number of bytes received since the last counter reset.
rxTotalPkts	Total number of receive packets.
ifOutOctets	The total number of octets transmitted out of the interface, including framing characters.
txTotalPkts	Total number of transmitted packets.

Step 6 From the Alarm Type drop-down list, indicate whether the event will be triggered by the rising threshold, the falling threshold, or both the rising and falling thresholds.

Step 7 From the Sample Type drop-down list, choose either **Relative** or **Absolute**. Relative restricts the threshold to use the number of occurrences in the user-set sample period. Absolute sets the threshold to use the total number of occurrences, regardless of time period.

Step 8 Type in an appropriate number of seconds for the Sample Period.

Step 9 Type in the appropriate number of occurrences for the Rising Threshold.

For a rising type of alarm, the measured value must move from below the falling threshold to above the rising threshold. For example, if a network is running below a rising threshold of 1000 collisions every 15 seconds and a problem causes 1001 collisions in 15 seconds, the excess occurrences trigger an alarm.

Step 10 Enter the appropriate number of occurrences in the Falling Threshold field. In most cases a falling threshold is set lower than the rising threshold.

A falling threshold is the counterpart to a rising threshold. When the number of occurrences is above the rising threshold and then drops below a falling threshold, it resets the rising threshold. For example, when the network problem that caused 1001 collisions in 15 seconds subsides and creates only 799 collisions in 15 seconds, occurrences fall below a falling threshold of 800 collisions. This resets the rising threshold so that if network collisions again spike over a 1000 per 15-second period, an event again triggers when the rising threshold is crossed. An event is triggered only the first time a rising threshold is exceeded (otherwise, a single network problem might cause a rising threshold to be exceeded multiple times and cause a flood of events).

Step 11 Click **OK**.

Note To view all RMON thresholds, click **Show All RMON thresholds**.

Step 12 Return to your originating procedure (NTP).

DLP-G338 Provision the 10G Data Muxponder Trunk Port Alarm and TCA Thresholds

Purpose	This task changes the MXP_MR_10DME_C and MXP_MR_10DME_L trunk port alarm and TCA thresholds.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_10DME_C or MXP_MR_10DME_L card where you want to change the trunk port alarm and TCA settings.

Step 2 Click the **Provisioning > Optics Thresholds** tabs.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Note Do not modify the Laser Bias parameters.

Step 3 If TCA is not selected, click **TCA** and then click Refresh. If it is selected, continue with Step 4.

Step 4 Provision the trunk port (Port 9) TCA thresholds as follows:

- RX Power High: –9 dBm
- RX Power Low: –18 dBm
- TX Power High: 9 dBm
- TX Power Low: 0 dBm

Step 5 Under Types, click the **Alarm** radio button and click **Refresh**.

Note Do not modify the Laser Bias parameters.

Step 6 Provision the trunk port (Port 9) Alarm thresholds as follows:

- RX Power High: –8 dBm
- RX Power Low: –20 dBm
- TX Power High: 7 dBm
- TX Power Low: 3 dBm

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Step 7 Click **Apply**.

Step 8 Return to your originating procedure (NTP).

DLP-G339 Provision the 10G Data Muxponder Client Port Alarm and TCA Thresholds

Purpose	This task provisions the client port alarm and TCA thresholds for the MXP_MR_10DME_C and MXP_MR_10DME_L cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G278 Provision the Optical Line Rate, page 5-11 DLP-G46 Log into CTC, page 2-27
Required/As Needed	Required
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_10DME_C and MXP_MR_10DME_L card where you want to change the client port alarm and TCA settings.

Step 2 Click the **Provisioning > Optics Thresholds** tabs. The TCA thresholds are shown by default.

Step 3 Referring to Table 5-77, provision the client ports (Ports 1 through 8) TCA thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low based on the client interface at the other end.

Note Do not modify the Laser Bias parameters.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Note The hardware device that plugs into a TXP, MXP, GE_XP, 10GE_XP, or ADM-10G card faceplate to provide a fiber interface to the card is called a Small Form-factor Pluggable (SFP or XFP). In CTC, SFPs and XFPs are called pluggable port modules (PPMs). SFPs/XFPs are hot-swappable input/output devices that plug into a port to link the port with the fiber-optic network. Multirate PPMs have provisionable port rates and payloads. For more information about SFPs and XFPs, refer to the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual.*

Table 5-77 MXP_MR_10DME_C and MXP_MR_10DME_L Card Client Interfaces TCA Thresholds

PPM Port Rate	Pluggable Port Module (XFP)	TCA RX Power High	TCA RX Power Low	TCA TX Power High	TCA TX Power Low
FC1G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	0	–17	3	–16
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–3	–20	3	–16
FC2G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	0	–15	3	–16
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–3	–20	3	–16
FICON1G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	0	–17	3	–16
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–3	–20	3	–16
FICON2G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	0	–17	3	–16
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–3	–20	3	–16
ISC3 PEER 1G ISC3 PEER 2G	ONS-SE-G2F-SX	0	–17	3	–16
	ONS-SE-G2F-LX	0	–20	3	–16
FC4G	ONS-SE-4G-MM	0	–12	4	–15
	ONS-SE-4G-SM	–1	–15	4	–15
FICON4G	ONS-SE-4G-MM	0	–12	4	–15
	ONS-SE-4G-SM	–1	–15	4	–15

Step 4 Click **Apply**.

Step 5 Repeat Steps 3 and 4 to provision each additional client port.

Step 6 Under Types, click the **Alarm** radio button and click **Refresh**.

Step 7 Referring to Table 5-78, provision the client port (Ports 1 through 8) Alarm thresholds for RX Power High, RX Power Low, TX Power High, and TX Power Low based on the client interface that is provisioned.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Table 5-78 MXP_MR_10DME_C and MXP_MR_10DME_L Card Client Interface Alarm Thresholds

PPM Port Rate	Pluggable Port Module (XFP)	Alarm RX Power Low	Alarm RX Power High	Alarm TX Power Low	Alarm TX Power High
FC1G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–20	3	–13	–1
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
FC2G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–18	3	–13	–1
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
FICON1G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–20	3	–13	–1
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
FICON2G	15454-SFP-GEFC-SX 15454E-SFP-GEFC-S ONS-SE-G2F-SX	–20	3	–13	–1
	15454-SFP-GE+-LX 15454E-SFP-GE+-LX ONS-SE-G2F-LX	–23	0	–13	0
ISC3 PEER 1G ISC3 PEER 2G	ONS-SE-G2F-SX	–20	3	–13	–1
	ONS-SE-G2F-LX	–23	0	–13	0
FC4G	ONS-SE-4G-MM	–15	3	–11	–1
	ONS-SE-4G-SM	–18	2	–11	0
FICON4G	ONS-SE-4G-MM	–15	3	–11	–1
	ONS-SE-4G-SM	–18	2	–11	0

Step 8 Click **Apply**.

Step 9 Repeat Steps 7 and 8 to provision each additional client port.

Step 10 Return to your originating procedure (NTP).

DLP-G366 Change the 10G Data Muxponder OTN Settings

Purpose	This task changes the OTN settings for the MXP_MR_10DME_C and MXP_MR_10DME_L cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the MXP_MR_10DME_C and MXP_MR_10DME_L card where you want to change the OTN settings.

Step 2 Click the **Provisioning > OTN** tabs, then choose one of the following subtabs: **OTN Lines**, **G.709 Thresholds**, **FEC Thresholds**, or **Trail Trace Identifier**.

Step 3 Modify any of the settings described in Tables 5-79 through 5-82.

Note You must modify Near End and Far End; 15 Min and 1 Day; and SM and PM independently. To do so, choose the appropriate radio button and click **Refresh**.

Table 5-79 describes the values on the Provisioning > OTN > OTN Lines tab.

Table 5-79 MXP_MR_10DME_C and MXP_MR_10DME_L Card OTN Line Settings

Parameter	Description	Options
Port	(Display only) Displays the port number.	9 (Trunk)
G.709 OTN	Sets the OTN lines according to ITU-T G.709.	• Enable • Disable
FEC	Sets the OTN lines to forward error correction (FEC).	• Standard • Enhanced
SF BER	(Display only) Sets the signal fail bit error rate.	• 1E-5
SD BER	Sets the signal degrade bit error rate.	• 1E-5 • 1E-6 • 1E-7 • 1E-8 • 1E-9
Asynch/Synch Mapping	Sets how the ODUk (client payload) is mapped to the optical channel (OTUk).	• Asynch mapping • Synch mapping

Table 5-80 describes the values on the Provisioning > OTN > G.709 Thresholds tab.

Table 5-80 MXP_MR_10DME_C and MXP_MR_10DME_L Card ITU-T G.709 Threshold Settings

Parameter	Description	Options
Port[1]	(Display only) Port number.	9 (Trunk)
ES	Errored seconds	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.
SES	Severely errored seconds	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.
UAS	Unavailable seconds	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.
BBE	Background block errors	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.
FC	Failure counter	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.

1. Latency for a 1G-FC payload without ITU-T G.709 is 4 microseconds, and with ITU-T G.709 is 40 microseconds. Latency for a 2G-FC payload without ITU-T G.709 is 2 microseconds, and with ITU-T G.709 is 20 microseconds. Consider these values when planning a FC network that is sensitive to latency.

Table 5-81 describes the values on the Provisioning > OTN > FEC Threshold tab.

Table 5-81 MXP_MR_10DME_C and MXP_MR_10DME_L Card FEC Threshold Settings

Parameter	Description	Options
Port	(Display only) Port number.	2
Bit Errors Corrected	Sets the value for bit errors corrected.	Numeric. Can be set for 15-minute or one-day intervals.
Uncorrectable Words	Sets the value for uncorrectable words.	Numeric. Can be set for 15-minute or one-day intervals.

Table 5-82 describes the values on the Provisioning > OTN > Trail Trace Identifier tab.

Table 5-82 MXP_MR_10DME_C and MXP_MR_10DME_L Card Trail Trace Identifier Settings

Parameter	Description	Options
Port	(Display only) Port number.	2
Level	Sets the level.	• Section • Path
Received Trace Mode	Sets the trace mode.	• Off/None • Manual

Table 5-82 MXP_MR_10DME_C and MXP_MR_10DME_L Card Trail Trace Identifier Settings

Parameter	Description	Options
Transmit	Displays the current transmit string; sets a new transmit string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Disable FDI on TTIM	If a Trace Identifier Mismatch on Section overhead alarm arises because of a J0 overhead string mismatch, no Forward Defect Indication (FDI) signal is sent to the downstream nodes if this box is checked.	• Checked (FDI on TTIM is disabled) • Unchecked (FDI on TTIM is not disabled)
Expected	Displays the current expected string; sets a new expected string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Received	(Display only) Displays the current received string. You can click Refresh to manually refresh this display, or check the Auto-refresh every 5 sec check box to keep this panel updated.	String of trace string size

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

NTP-G165 Modify the GE_XP or 10GE_XP Ethernet Parameters, Line Settings, and PM Thresholds

Purpose	This procedure changes Ethernet, line, and PM threshold settings for the GE_XP and 10GE_XP cards.
Tools/Equipment	None
Prerequisite Procedures	NTP-G179 Install the TXP, MXP, GE_XP, 10GE_XP, and ADM-10G Cards, page 3-55 DLP-G63 Install an SFP or XFP, page 3-57 DLP-G379 Change the GE_XP or 10GE_XP Card Mode, page 5-6
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 Complete the "DLP-G46 Log into CTC" task on page 2-27 at the node where you want to change the card settings. If you are already logged in, continue with Step 2.

Step 2 As needed, complete the "NTP-G103 Back Up the Database" procedure on page 13-2 to preserve the existing transmission settings.

Step 3 Verify the card mode:

a. Display the GE_XP or 10GE_XP card in card view.

b. Click the **Provisioning > Card** tabs.

c. Verify that the card mode is set to the mode designated by your site plan:

- L2 over DWDM (GE_XP or 10GE_XP)
- 10GE TXP (10GE_XP only)
- 10GE MXP (GE_XP only)
- 20GE MXP (GE_XP only)

If the card mode is set correctly, continue with Step 4. If not, complete the "DLP-G379 Change the GE_XP or 10GE_XP Card Mode" task on page 5-6.

Step 4 Complete the "DLP-G380 Provision the GE_XP and 10GE_XP Ethernet Settings" task on page 5-142.

Step 5 If the GE_XP or 10GE_XP card mode is L2 over DWDM, complete the following tasks, as needed. If the card mode is not L2 over DWDM, continue with Step 6.

- DLP-G381 Provision the GE_XP and 10GE_XP Layer 2 Protection Settings, page 5-147
- DLP-G421 Create and Store an SVLAN Database, page 7-56
- DLP-G382 Add and Remove SVLANS to/from GE_XP and 10GE_XP Ports, page 5-148
- DLP-G383 Provision the GE_XP and 10GE_XP Quality of Service Settings, page 5-149
- DLP-G384 Provision the GE_XP and 10GE_XP QinQ Settings, page 5-150
- DLP-G385 Provision the GE_XP and 10GE_XP MAC Filter Settings, page 5-152

Step 6 Complete the following tasks, as needed.

- DLP-G386 Provision the GE_XP and 10GE_XP Trunk Port Alarm and TCA Thresholds, page 5-153

- DLP-G387 Provision the GE_XP and 10GE_XP Client Port Alarm and TCA Thresholds, page 5-154
- DLP-G388 Change the GE_XP and 10GE_XP RMON Thresholds, page 5-156
- DLP-G389 Change the GE_XP and 10GE_XP Optical Transport Network Settings, page 5-159

Note To use the Alarm Profiles tab, including creating alarm profiles and suppressing alarms, see Chapter 9, "Manage Alarms."

Stop. You have completed this procedure.

DLP-G380 Provision the GE_XP and 10GE_XP Ethernet Settings

Purpose	This task changes the Ethernet settings for the GE_XP or 10GE_XP card.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the GE_XP or 10GE_XP card where you want to change the Ethernet settings. The card view opens.

Step 2 Click the **Provisioning > Ether Ports > Ethernet** tabs.

Step 3 Modify any of the settings for the Ethernet tab as described in Table 5-83. The parameters that appear depend on the card mode.

Table 5-83 10GE_XP or GE_XP Ethernet Settings

Parameter	Description	Card Mode	Options
Port	(Display only) The Port number (*n-n*) and rate (GE or TEN_GE).	• L2 over DWDM • 10GE TXP • 10GE MXP • 20GE MXP	—
MTU	The maximum size of the Ethernet frames accepted by the port.	• L2 over DWDM • 10GE TXP • 10GE MXP • 20GE MXP	Numeric. Default: 1548 Range 64 to 9216 (jumbo frame)

Table 5-83 10GE_XP or GE_XP Ethernet Settings (continued)

Parameter	Description	Card Mode	Options
Mode	Sets the Ethernet mode. **Note**: For GE_XP or 10GE_XP cards that are in Y-cable protection groups, Mode must be set to 1000 and 10000 Mbps respectively.	• L2 over DWDM • 10GE TXP • 10GE MXP • 20GE MXP	• Auto (default) • 1000 Mbps • 10000 Mbps **Note** If Mode is set to Auto, the GE_XP or 10GE_XP card expects autonegotiation to be enabled in the subtending shelf. **Note** On GE_XP card, the copper Pluggable Port Module (PPM) interface can auto-negotiate and carry traffic only when the peer interface operates at 1000 Mbps.
Flow Control	Enables/disables flow control messaging with its peer port. When enabled, the port can send and receive PAUSE frames when buffer congestion occurs. When disabled, the PAUSE frames received are discarded. **Note** Flow control messaging is symmetric and not negotiated. When flow control is enabled on one port, the other end of the link (peer port) is not considered. That is, even if flow control is disabled on the peer port, the GE_XP or 10GE_XP card will send PAUSE frames.	• L2 over DWDM • 10GE MXP • 20GE MXP	• ON—flow control is enabled. • OFF (default)—flow control is disabled
Committed Info Rate	Sets the guaranteed information rate as provided by the service provider service-level agreement.	• L2 over DWDM • 10GE MXP • 20GE MXP	Numeric. Default: 100 Range: 0 to 100%

Table 5-83 10GE_XP or GE_XP Ethernet Settings (continued)

Parameter	Description	Card Mode	Options
Committed Burst Size	Sets the maximum number of bits that will be transferred per second.	• L2 over DWDM • 10GE MXP • 20GE MXP	• None • 4k (default) • 8k • 16k • 32k • 64k • 128k • 256k • 512k • 1MB • 2MB • 8MB • 16MB
Excess Burst Size	The maximum number of bits that are credited for later transfer in the event the committed burst rate cannot be transmitted.	• L2 over DWDM • 10GE MXP • 20GE MXP	• None • 4k (default) • 8k • 16k • 32k • 64k • 128k • 256k • 512k • 1MB • 2MB • 8MB • 16MB
NIM	Sets the port network interface mode (NIM). This parameter classifies port types designed for the Metro Ethernet market to simplify deployment, management, and troubleshooting.	L2 over DWDM	• UNI Mode—provisions the port as a user-to-network interface (UNI). This is the interface that faces the subscriber. • NNI Mode—provisions the port as a network-to-network interface. This is the interface that faces the service provider network.
Egress QoS	Enables Quality of Service (QoS) on the port's egress or output queues.	L2 over DWDM	• Checked—QoS is enabled on the port's egress queues. • Unchecked—(default) QoS is disabled on the port's egress queues.

Table 5-83 10GE_XP or GE_XP Ethernet Settings (continued)

Parameter	Description	Card Mode	Options
MAC Learning	Enables or disables MAC learning for the port. MAC learning is used by Layer 2 switches to learn the MAC addresses of network nodes so the Layer 2 switches send traffic to the right location. Layer 2 switches, including the GE_XP and 10GE_XP cards in L2 over DWDM mode, maintain a MAC learning table that associates the MAC addresses and VLANs with a given port. **Note** MAC address table aging is 300 seconds. It cannot be changed.	L2 over DWDM	• Checked—MAC learning is enabled for this port. • Unchecked—(default) MAC learning is disabled.
Ingress CoS	Provisions the IEEE 802.1p ingress Class of Service (CoS). The CoS.1p bits set the Ethernet frame priority. Ingress CoS applies only to ports provisioned as UNI mode. It does not apply to ports provisioned as NNI mode.	L2 over DWDM	• 0—(default) Sends CoS values 1 through 7 to the priority queue. In other words, frames with CoS settings 1 through 7 have higher priority. 0 is the lowest CoS priority. • 1—Sends CoS values 2 through 7 to the priority queue. • 2—Sends CoS values 3 through 7 to the priority queue. • 3—Sends CoS values 4 through 7 to the priority queue. • 4—Sends CoS values 5 through 7 to the priority queue. • 5—Sends CoS values 6 and 7 to the priority queue. • 6—Sends CoS value 7 to the priority queue. • 7—Sends no CoS values to the priority queue. 7 is the highest CoS priority.

Table 5-83 10GE_XP or GE_XP Ethernet Settings (continued)

Parameter	Description	Card Mode	Options
Inner Ethertype (Hex)	Defines the inner Ethertype field. The Ethertype field indicates which protocol is being transported in an Ethernet frame. The inner Ethertype applies to ports provisioned in UNI mode only. It does not apply to ports provisioned as NNI mode. The ports must be OOS before the inner Ethertype can be provisioned.	L2 over DWDM	Numeric. Default: 8100 (IEEE Std 802.1Q customer VLAN tag type) Range: 0x0600 to 0xFFFF
Outer Ethertype (Hex)	Defines the outer Ethertype field. The Ethertype field identifies which protocol is being transported in an Ethernet frame.	L2 over DWDM	Numeric. Default: 8100 (IEEE 802.1Q customer VLAN tag type) Range: 0x0600 to 0xFFFF

Table 5-83 shows the inner and outer Ethertype behavior based on the NIM setting (either NNI mode or UNI mode). When the NIM is set to UNI, and the QinQ mode is set to Selective, the Ethertype behavior depends on the SVLAN/CVLAN operation that is provisioned, either Add or Translate. (QinQ parameters are provisioned in "DLP-G384 Provision the GE_XP and 10GE_XP QinQ Settings" task on page 5-150.)

Note A packet can exit out of any UNI/NNI port if the outermost tag in the packet matches with the SVLAN provisioned on that port. In other words, in the egress path, the inner tags (even if present) of the packet are not matched with the CVLAN provisioned on the port.

Note The Committed Burst Size and Excess Burst Size must be configured based on the expected packet size to ensure that no packets are dropped when Flow Control is enabled. For example, if the CIR is 40% and packet size is 1 KB, the Committed Burst Size and Excess Burst Size should be set to 1 MB.

Note When you set the Committed Info Rate above 40% on 10GE_XP card, the Committed Burst Size and Excess Burst Size must be set to at least 32K. The Committed Burst Size and Excess Burst Size can be increased based on the packet size and Committed Info Rate value.

Table 5-84 Ethertype Behavior

Port Type/ Ethertype	NNI Mode	UNI Mode		
		Mode: Transparent	Mode: Selective Operation: Add	Mode: Selective Operation: Translate
Inner Ethertype	Not applicable: the outer Ethertype value is used.	Not applicable: all packets are mapped over the SVLAN.	Working (card-based)	Working (card-based)
Outer Ethertype	Working (per port)	Not applicable: the outer Ethertype is contained in the inner VLAN (same as UNI Selective mode).	Not applicable: the outer Ethertype is the one contained in the inner VLAN.	This cannot be set by port, only by card. The outer Ethertype is automatically set to the inner Ethertype.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G381 Provision the GE_XP and 10GE_XP Layer 2 Protection Settings

Purpose	This task provisions the Layer 2 protection settings for the 10GE_XP or GE_XP cards when the cards are provisioned in L2 over DWDM mode.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note To perform this task, the GE_XP or 10GE_XP card mode must be L2 over DWDM. To change the card mode, complete the "DLP-G379 Change the GE_XP or 10GE_XP Card Mode" task on page 5-6.

Note GE_XP or 10GE_XP Layer 2 protection settings must be planned for the entire VLAN ring. One card in the ring is provisioned as the master card and one port is set to Blocking. The master card coordinates the protection switching for the GE_XP or 10GE_XP VLAN ring.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the GE_XP or 10GE_XP card where you want to change the protection settings. The card view opens.

Step 2 Click the **Provisioning > Protection** tabs.

Step 3 In the Status column, modify the port protection status by clicking the appropriate table cell and choosing one of the following from the drop-down list:

- Forwarding—Forwards the Ethernet packets that are received by the port.
- Blocking—Blocks the Ethernet packets that are received by the port.

Note One port within a VLAN ring must be set to Blocking. All other ports must be set to Forwarding.

Step 4 Check the Master checkbox if you want the card to serve as the protection coordinator for the VLAN ring. If not, continue with Step 5.

Step 5 From the Protection drop-down list, choose one of the following:

- Enabled—Enables protection.
- Disabled—Disables protection
- Forced—Converts all the SVLANs to protected SVLANs irrespective of the SVLAN protection configuration in the SVLAN database. This is applicable to a point-to-point linear topology. The SVLAN protection must be forced to move all SVLANs, including protected and unprotected SVLANs, to the protect path irrespective of provisioned SVLAN attributes.

Step 6 Click **Apply**.

Step 7 Return to your originating procedure (NTP).

DLP-G382 Add and Remove SVLANS to/from GE_XP and 10GE_XP Ports

Purpose	This task adds or removes service provider VLAN (SVLAN) provisioning to/from GE_XP and 10GE_XP ports. This task only applies to GE_XP and 10GE_XP cards in L2 over DWDM mode.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27 DLP-G421 Create and Store an SVLAN Database, page 7-56
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note To perform this task, the GE_XP or 10GE_XP card mode must be in L2 over DWDM mode. To change the card mode, complete the "DLP-G379 Change the GE_XP or 10GE_XP Card Mode" task on page 5-6.

Note This task can only be performed on ports provisioned as NNI. See the "DLP-G380 Provision the GE_XP and 10GE_XP Ethernet Settings" task on page 5-142.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the GE_XP or 10GE_XP card where you want to change the SVLAN port settings. The card view opens.

Step 2 Click the **Provisioning > SVLAN** tabs.

Step 3 For each SVLAN shown in the table, click the checkbox under the Port [*port name*] table cell to include the SVLAN in that port. If you do not want the SVLAN included, uncheck the checkbox.

Note If no SVLANs appear in the SVLAN tab, complete the "DLP-G421 Create and Store an SVLAN Database" task on page 7-56.

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

DLP-G383 Provision the GE_XP and 10GE_XP Quality of Service Settings

Purpose	This task provisions the Weighted Round Robin (WRR) value and bandwidth for QoS Class of Service (CoS) egress queues on a GE_XP and 10GE_XP card port.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note To perform this task, the GE_XP or 10GE_XP card mode must be L2 over DWDM and the port must have QoS enabled. Refer to the "DLP-G379 Change the GE_XP or 10GE_XP Card Mode" task on page 5-6 and the "DLP-G380 Provision the GE_XP and 10GE_XP Ethernet Settings" task on page 5-142, if needed.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the 10GE_XP or GE_XP card where you want to change the QoS settings.

Step 2 Click the **Provisioning > QoS** tabs.

Step 3 In the Port field at the bottom of the window, choose the port where you want to provision the QoS settings.

Step 4 For each CoS egress queue, 0 through 7, define the following:

- WRR weight—sets the Weighted Round Robin (WRR) level for the CoS egress queue. The default is 1. The range is 0 to 15, where 0 is Strict Priority.)

  Note The GE_XP and 10GE_XP define a set of eight queues, one queue for each CoS. Only one of the queues can be assigned the 0 WRR weight (Strict Priority).

- Bandwidth—sets the bandwidth allocated for the CoS egress queue, 100 is the default. This bandwidth value is the percentage (%) of bandwidth with respect to the SFP, XFP, or port speed (100 Mbps for FE, 1 Gbps for GE, and 10 Gbps for 10GE) of the interface.

Step 5 Click **Apply**. Click **Yes** in the confirmation dialog box.

Step 6 Return to your originating procedure (NTP).

DLP-G384 Provision the GE_XP and 10GE_XP QinQ Settings

Purpose	This task provisions the IEEE 802.1QinQ VLAN tags on the GE_XP or 10GE_XP card UNI ports. QinQ tags expand the VLAN capability by tagging the tagged packets to produce a "double-tagged" Ethernet frame. For service providers the expanded VLAN allows specific services to be provided on specific VLANs for specific customers, while other types of services can be provided to other customers on other VLANs.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note To perform this task, the GE_XP or 10GE_XP card mode must be L2 over DWDM. To change the card mode, complete the "DLP-G379 Change the GE_XP or 10GE_XP Card Mode" task on page 5-6.

Note This task can only be performed on the GE_XP or 10GE_XP card UNI ports. (To provision the port Ethernet parameters, see the "DLP-G380 Provision the GE_XP and 10GE_XP Ethernet Settings" task on page 5-142.)

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the 10GE_XP or GE_XP card where you want to change the QinQ settings.

Step 2 Click the **Provisioning > QinQ** tabs.

Step 3 Click the **Port** field and choose the port where you want to provision QinQ.

Step 4 Click the **Mode** field and choose one of the following modes from the drop-down list:

- Selective—The incoming Ethernet packet is checked against the CVLAN and SVLAN table. If the CVLAN is not found, the packed is dropped.
- Transparent—All incoming packets are transported with the additional VLAN chosen in the SVLAN field.

Step 5 Click the **BPDU** field and choose one of the following bridge protocol data unit (BPDU) modes from the drop-down list:

- Drop (default)—If checked, drops incoming packets with any of the following destination MAC addresses:
  - 01-80-c2-00-00-00—IEEE 802.1D
  - 01-80-c2-00-00-02—Link Aggregation Control Protocol (LACP)
  - 01-80-0c-cc-cc-cc—VLAN Spanning Tree Plus (PVST+)

  - 01-00-c-cc-cc-cc—Cisco Discovery Protocol (CDP) type 0x2000, VLAN Trunk Protocol (VTP) type 0x2003, Port Aggregation Protocol (PAgP), type 0x0104, Uni-Directional Link Detection (UDLD) type 0x111, Dynamic Trunking Protocol (DTP) type 0x2004
- Tunnel—If checked, transparently sends any of the destination MAC addresses listed above.

Step 6 If the Mode was set to Selective, complete the following steps. If not, continue with Step 7.

a. To add a row, click **Add**.

b. Click the **CVLAN** table and type in the CVLAN range. You can enter a single value or a range using "-" between the two ends of the range.

Note If you are using Software Release 8.5 or earlier, it is recommended that you do not specify a CVLAN range due to certain limitations in the feature.

c. Click the **SVLAN** table cell and choose an SVLAN from the drop-down list.

d. Click the **Operation** table cell and choose an operation:

  - Add—Adds the SVLAN on top of the CVLAN.
  - Translate—The CVLAN is translated with the SVLAN value.

Note If Double Add and Translate Add are configured on a GE_XP or a 10GE_XP card, a PROV-MISMATCH alarm is raised. Until this alarm is cleared, provisioning on the card is not possible.

Note A CVLAN with a value of 0 means "untagged packet.

Note Two or more CVLANs cannot be translated over the same SVLAN.

e. Click **Apply**.

f. Continue with Step 8.

Step 7 If the Mode was set to Transparent, in the SVLAN field, choose the SVLAN to be added to incoming packets.

Step 8 Return to your originating procedure (NTP).

DLP-G385 Provision the GE_XP and 10GE_XP MAC Filter Settings

Purpose	This task provisions the MAC address filter for the GE_XP or 10GE_XP cards when the cards are provisioned in L2 over DWDM mode. The MAC address filter is a list of MAC addresses whose packets should be accepted or dropped.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note To perform this task, the GE_XP or 10GE_XP card mode must be L2 over DWDM. To change the card mode, complete the "DLP-G379 Change the GE_XP or 10GE_XP Card Mode" task on page 5-6.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the GE_XP or 10GE_XP card where you want to change the MAC filter settings.

Step 2 Click the **Provisioning > Security > MAC Filter** tabs.

Step 3 Click the port for which you want to create a MAC filter.

Step 4 Click **Edit**.

Step 5 In the Edit MAC Address dialog box, click **Add**. A new table entry appears with the MAC address 00-00-00-00-00-00.

Step 6 In the MAC Address Port field, type in the MAC address you want to filter over the default 00-00-00-00-00-00 address.

Step 7 If you want to add more MAC addresses, repeat Steps 5 and 6. (Up to eight MAC addresses can be added for each port.) If not, click **OK**.

Step 8 On the MAC Filter table, provision the Allowed checkbox:

- Checked—All MAC addresses different from the address(es) entered in the table will be dropped.
- Unchecked—All MAC addresses matching the address(es) entered in the table will be dropped.

Step 9 Click **Apply**.

Step 10 Repeat Steps 3 and 9 for each port of the GE_XP or 10GE_XP that you want to set up.

Step 11 Return to your originating procedure (NTP).

DLP-G386 Provision the GE_XP and 10GE_XP Trunk Port Alarm and TCA Thresholds

Purpose	This task changes the GE_XP or 10GE_XP trunk port alarm and TCA thresholds.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note The GE_XP and 10GE_XP cards have two trunk ports. The GE_XP trunk ports are 21-1 and 22-1 on the card graphic and 21 (Trunk) and 22 (Trunk) on the Optics Thresholds table. The 10GE_XP card trunk ports are 3-1 and 4-1 on the card graphic and 3 (Trunk) and 4 (Trunk) on the Optics Thresholds table.

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the GE_XP and 10GE_XP card where you want to change the trunk port alarm and TCA settings.

Step 2 Click the **Provisioning > Optics Thresholds** tabs.

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Note Do not modify the Laser Bias parameters.

Note The hardware device that plugs into a TXP, MXP, GE_XP, 10GE_XP, or ADM-10G card faceplate to provide a fiber interface to the card is called a Small Form-factor Pluggable (SFP or XFP). In CTC, SFPs and XFPs are called pluggable port modules (PPMs). SFPs/XFPs are hot-swappable input/output devices that plug into a port to link the port with the fiber-optic network. Multirate PPMs have provisionable port rates and payloads. For more information about SFPs and XFPs, refer to the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual.*

Step 3 If TCA is not selected, click **TCA** and then click **Refresh**. When TCA is selected, continue with Step 4.

Step 4 Provision the trunk port TCA thresholds as shown in Table 5-85.

Table 5-85 GE_XP and 10GE_XP Card Trunk Interface TCA Thresholds

Pluggable Port Module (XFP)	TCA RX Power High	TCA RX Power Low	TCA TX Power High	TCA TX Power Low
XFP WDM no FEC	–7	–23	6	–4
XFP WDM standard FEC	–7	–27	6	–4
XFP WDM Enhanced FEC	–7	–27	6	–4

Step 5 Under Types, click the **Alarm** radio button and click **Refresh**.

Note Do not modify the Laser Bias parameters.

Step 6 Provision the trunk port alarm thresholds as shown in Table 5-86.

Table 5-86 GE_XP and 10GE_XP Card Trunk Interface Alarm Thresholds

Pluggable Port Module (XFP)	Alarm RX Power High	Alarm RX Power Low	Alarm TX Power High	Alarm TX Power Low
XFP WDM no FEC	–5	–26	5	–3
XFP WDM standard FEC	–5	–30	5	–3
XFP WDM Enhanced FEC	–5	–30	5	–3

Note You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Step 7 Click **Apply**.

Step 8 Repeat Steps 3 through 7 to provision the second trunk port.

Step 9 Return to your originating procedure (NTP).

DLP-G387 Provision the GE_XP and 10GE_XP Client Port Alarm and TCA Thresholds

Purpose	This task provisions the client port alarm and TCA thresholds for the GE_XP or 10GE_XP cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G277 Provision a Multirate PPM, page 5-8 DLP-G46 Log into CTC, page 2-27
Required/As Needed	Required
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note The GE_XP card has 20 client ports. The ports are 1-1 through 20-1 on the card graphic and 1 (Client) through 20 (Client) on the Optics Thresholds table. The 10GE_XP card has 2 client ports. The ports are 1-1 and 2-1 on the card graphic and 1 (Client) and 2 (Client) on the Optics Thresholds table.

Note The hardware device that plugs into a TXP, MXP, GE_XP, 10GE_XP, or ADM-10G card faceplate to provide a fiber interface to the card is called a Small Form-factor Pluggable (SFP or XFP). In CTC, SFPs and XFPs are called pluggable port modules (PPMs). SFPs/XFPs are hot-swappable input/output devices

that plug into a port to link the port with the fiber-optic network. Multirate PPMs have provisionable port rates and payloads. For more information about SFPs and XFPs, refer to the "Transponder and Muxponder Cards" chapter in the *Cisco ONS 15454 DWDM Reference Manual.*

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the GE_XP or 10GE_XP card where you want to change the client port alarm and TCA settings.

Step 2 Click the **Provisioning > Optics Thresholds** tabs. The TCA thresholds are shown by default.

Step 3 If TCA is not selected, click **TCA** and then click **Refresh**. When TCA is selected, continue with Step 4.

Step 4 Provision the first client port TCA thresholds as shown in Table 5-87.

Table 5-87 GE_XP and 10GE_XP Card Client Interface TCA Thresholds

Pluggable Port Module (XFP)	TCA RX Power High	TCA RX Power Low	TCA TX Power High	TCA TX Power Low
10GE LAN PHY 10GBASE-LR	1	–14	5	–12
1000Base-SX (1Gbps)[1]	0	–17	3	–16
1000Base-LX [1]	–3	–20	3	–16

1. GE client

Step 5 Under Types, click the **Alarm** radio button and click **Refresh**.

Note Do not modify the Laser Bias parameters.

Step 6 Provision the client port Alarm thresholds as shown in Table 5-88.

Table 5-88 GE_XP and 10GE_XP Card Client Interface Alarm Thresholds

Pluggable Port Module (XFP)	Alarm RX Power High	Alarm RX Power Low	Alarm TX Power High	Alarm TX Power Low
10GE LAN PHY 10GBASE-LR	3	–16	1	–8
1000Base-SX (1Gbps)[1]	3	–20	–2	–12
1000Base-SX (2Gbps)[1]	3	–18	–2	–12
1000Base-LX [1]	0	–23	–1	–12

1. GE client

Step 7 You must modify 15 Min and 1 Day independently. To do so, choose the appropriate radio button and click **Refresh**.

Step 8 Click **Apply**.

Step 9 Repeat Steps 3 through 8 to provision each additional client port.

Step 10 Return to your originating procedure (NTP).

DLP-G388 Change the GE_XP and 10GE_XP RMON Thresholds

Purpose	This task changes the GE_XP or 10GE_XP card RMON threshold settings.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), display the GE_XP or 10GE_XP card where you want to change the RMON thresholds.

Step 2 Click the **Provisioning > Line Thresholds > RMON Thresholds** tabs.

Step 3 Click **Create**. The Create Threshold dialog box appears.

Step 4 From the Port drop-down list, choose an individual port, or choose **All** to provision RMON thresholds for all ports.

Step 5 From the Variable drop-down list, choose an Ethernet variable. See Table 5-89 for a list of available Ethernet RMON variables.

Note Variable descriptions were obtained from the following Internet Engineering Task Force (IETF) Requests for Comment (RFCs): RFC 3635, RFC 2233, and RFC 1757. Refer to the RFCs for additional information.

Table 5-89 GE_XP and 10GE_XP Ethernet RMON Variables

Variable	Description
rxTotalPkts	Total number of receive packets.
ifInUcastPkts	The number of packets, delivered by this sub-layer to a higher (sub-)layer, which were not addressed to a multicast or broadcast address at this sub-layer.
ifInMulticastPkts	The number of packets, delivered by this sub-layer to a higher (sub-)layer, which were addressed to a multicast address at this sub-layer. For a MAC layer protocol, this includes both Group and Functional addresses.
ifInBroadcastPkts	The number of packets, delivered by this sub-layer to a higher (sub-)layer, which were addressed to a broadcast address at this sub-layer.
ifInDiscards	The number of inbound packets which were chosen to be discarded even though no errors had been detected to prevent their being deliverable to a higher-layer protocol. One possible reason for discarding such a packet could be to free up buffer space.
ifInErrors	Total number of receive errors.
ifOutOctets	Total number of octets transmitted out of the interface, including framing characters.
txTotalPkts	Total number of transmitted packets.
ifOutUcastPkts	The total number of packets that higher-level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent.

Table 5-89 GE_XP and 10GE_XP Ethernet RMON Variables (continued)

Variable	Description
ifOutMulticastPkts	The total number of packets that higher-level protocols requested be transmitted, and which were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. For a MAC layer protocol, this includes both group and functional addresses.
ifOutBroadcastPkts	The total number of packets that higher-level protocols requested be transmitted, and which were addressed to a broadcast address at this sub-layer, including those that were discarded or not sent.
ifOutDiscards	The number of outbound packets which were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free up buffer space.
dot33StatsFCSErrors	A count of frames received on a particular interface that are an integral number of octets in length but do not pass the FCS check.
dot33StatsFrameTooLong	A count of frames received on a particular interface that exceed the maximum permitted frame size.
dot33ControlInUnknownOpCode	A count of MAC control frames received on this interface that contain an opcode that is not supported by this device.
dot33InPauseFrames	A count of MAC control frames received on this interface with an opcode indicating the PAUSE operation.
dot33OutPauseFrames	A count of MAC Control frames transmitted on this interface with an opcode indicating the PAUSE operation.
etherStatsUndersizePkts	The total number of packets received that were less than 64 octets long (excluding framing bits, but including FCS octets) and were otherwise well formed.
etherStatsFragments	The total number of packets received that were less than 64 octets in length (excluding framing bits but including FCS octets) and had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral.
etherStatsPkts	The total number of packets (including bad packets,broadcast packets, and multicast packets) received.
etherStatsPkts64Octets	The total number of packets (including bad packets) received that were 64 octets in length (excluding framing bits but including FCS octets).
etherStatsPkts65to127Octets	The total number of packets (including error packets) received that were between 65 and 127 octets in length inclusive (excluding framing bits but including FCS octets).
etherStatsPkts128to255Octets	The total number of packets (including error packets) received that were between 128 and 255 octets in length inclusive (excluding framing bits but including FCS octets).
etherStatsPkts256to511Octets	The total number of packets (including error packets) received that were between 256 and 511 octets in length inclusive (excluding framing bits but including FCS octets).
etherStatsPkts512to1023Octets	The total number of packets (including error packets) received that were between 512 and 1023 octets in length inclusive (excluding framing bits but including FCS octets).
etherStatsPkts1024to1518Octets	The total number of packets (including error packets) received that were between 1024 and 1518 octets in length inclusive (excluding framing bits but including FCS octets).
etherStatsPkts1519to1522Octets	The total number of packets (including error packets) received that were between 1519 and 1522 octets in length inclusive (excluding framing bits but including FCS octets). **Note** This variable is supported only on client ports.

Table 5-89 GE_XP and 10GE_XP Ethernet RMON Variables (continued)

Variable	Description
etherStatsBroadcastPkts	The total number of good packets received that were directed to the broadcast address
etherStatsMulticastPkts	The total number of good packets received that were directed to a multicast address. Note that this number does not include packets directed to the broadcast address.
etherStatsOversizePkts	The total number of packets received that were longer than 1518 octets (for untagged packets) or 1522 octets (for tagged packets) (excluding framing bits, but including FCS octets) and were otherwise well formed.
etherStatsJabbers	The total number of packets received that were longer than 1518 octets (for untagged packets) or 1522 octets (for tagged packets) (excluding framing bits, but including FCS octets), and were not an integral number of octets in length or had a bad FCS.
etherStatsOctets	The total number of octets of data (including those in bad packets) received on the network (excluding framing bits but including FCS octets).

Step 6 From the Alarm Type drop-down list, indicate whether the event will be triggered by the rising threshold, the falling threshold, or both the rising and falling thresholds.

Step 7 From the Sample Type drop-down list, choose either **Relative** or **Absolute**. Relative restricts the threshold to use the number of occurrences in the user-set sample period. Absolute sets the threshold to use the total number of occurrences, regardless of time period.

Step 8 Type in an appropriate number of seconds for the Sample Period.

Step 9 Type in the appropriate number of occurrences for the Rising Threshold.

For a rising type of alarm, the measured value must move from below the falling threshold to above the rising threshold. For example, if a network is running below a rising threshold of 1000 collisions every 15 seconds and a problem causes 1001 collisions in 15 seconds, the excess occurrences trigger an alarm.

Step 10 Enter the appropriate number of occurrences in the Falling Threshold field. In most cases a falling threshold is set lower than the rising threshold.

A falling threshold is the counterpart to a rising threshold. When the number of occurrences is above the rising threshold and then drops below a falling threshold, it resets the rising threshold. For example, when the network problem that caused 1001 collisions in 15 seconds subsides and creates only 799 collisions in 15 seconds, occurrences fall below a falling threshold of 800 collisions. This resets the rising threshold so that if network collisions again spike over a 1000 per 15-second period, an event again triggers when the rising threshold is crossed. An event is triggered only the first time a rising threshold is exceeded (otherwise, a single network problem might cause a rising threshold to be exceeded multiple times and cause a flood of events).

Step 11 Click **OK**.

Step 12 To view all RMON thresholds, click **Show All RMON thresholds**. If not, continue with Step 12

Step 13 Return to your originating procedure (NTP).

DLP-G389 Change the GE_XP and 10GE_XP Optical Transport Network Settings

Purpose	This task changes the optical transport network (OTN) settings for the GE_XP or 10GE_XP cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Step 1 In node view (single-shelf mode) or shelf view (multishelf view), double-click the GE_XP or 10GE_XP card where you want to change the OTN settings.

Step 2 Click the **Provisioning > OTN** tabs, then choose one of the following subtabs: **OTN Lines**, **G.709 Thresholds**, **FEC Thresholds**, or **Trail Trace Identifier**.

Step 3 Modify any of the settings described in Tables 5-90 through 5-93.

Note You must modify Near End and Far End; 15 Min and 1 Day; and SM and PM independently. To do so, choose the appropriate radio button and click **Refresh**.

Table 5-90 describes the values on the Provisioning > OTN > OTN Lines tab.

Table 5-90 GE_XP or 10GE_XP Card OTN Line Settings

Parameter	Description	Options
Port	(Display only) Port number and description: 3 (Trunk) and 4 (Trunk): 10GE_XP cards 21 (Trunk) and 22 (Trunk): GE_XC cards	—
ITU-T G.709 OTN	Sets the OTN lines according to ITU-T G.709.	• Enable • Disable
FEC	Sets the OTN lines to forward error correction (FEC).	• Standard • Enhanced
SF BER	(Display only) Sets the signal fail bit error rate.	• 1E-5
SD BER	Sets the signal degrade bit error rate.	• 1E-5 • 1E-6 • 1E-7 • 1E-8 • 1E-9

Table 5-91 describes the values on the Provisioning > OTN > ITU-T G.709 Thresholds tab.

Table 5-91 GE_XP or 10GE_XP Card ITU-T G.709 Threshold Settings

Parameter	Description	Options
Port	(Display only) Port number and description: 3 (Trunk) and 4 (Trunk): 10GE_XP cards 21 (Trunk) and 22 (Trunk): GE_XC cards	—
ES	Errored seconds	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.
SES	Severely errored seconds	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.
UAS	Unavailable seconds	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.
BBE	Background block errors	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.
FC	Failure counter	Numeric. Can be set for Near End or Far End, for 15-minute or one-day intervals, or for SM (OTUk) or PM (ODUk). Select a bullet and click **Refresh**.

Table 5-92 describes the values on the Provisioning > OTN > FEC Threshold tab.

Table 5-92 GE_XP and 10GE_XP Card FEC Threshold Settings

Parameter	Description	Options
Port	(Display only) Port number and description: 3 (Trunk) and 4 (Trunk): 10GE_XP cards 21 (Trunk) and 22 (Trunk): GE_XC cards	—
Bit Errors Corrected	Sets the value for bit errors corrected.	Numeric. Can be set for 15-minute or one-day intervals.
Uncorrectable Words	Sets the value for uncorrectable words.	Numeric. Can be set for 15-minute or one-day intervals.

Table 5-93 describes the values on the Provisioning > OTN > Trail Trace Identifier tab.

Table 5-93 GE_XP or 10GE_XP Card Trail Trace Identifier Settings

Parameter	Description	Options
Port	(Display only) Port number.	2
Level	Sets the level.	• Section • Path
Received Trace Mode	Sets the trace mode.	• Off/None • Manual
Transmit	Displays the current transmit string; sets a new transmit string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Disable FDI on TTIM	If a Trace Identifier Mismatch on Section overhead alarm arises because of a J0 overhead string mismatch, no Forward Defect Indication (FDI) signal is sent to the downstream nodes if this box is checked.	• Checked (FDI on TTIM is disabled) • Unchecked (FDI on TTIM is not disabled)
Expected	Displays the current expected string; sets a new expected string. You can click the button on the right to change the display. Its title changes, based on the current display mode. Click **Hex** to change the display to hexadecimal (button changes to ASCII); click **ASCII** to change the display to ASCII (button changes to Hex).	String of trace string size
Received	(Display only) Displays the current received string. You can click Refresh to manually refresh this display, or check the Auto-refresh every 5 sec check box to keep this panel updated.	String of trace string size

Step 4 Click **Apply**.

Step 5 Return to your originating procedure (NTP).

NTP-G162 Change the ALS Maintenance Settings

Purpose	This procedure changes the ALS maintenance settings for the TXP, MXP, GE_XP, and 10GE_XP cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note The automatic laser shutdown (ALS) function is normally disabled for TXP, MXP, GE_XP, and 10GE_XP cards. Enable ALS only when the cards are directly connected to each other.

Step 1 In node view (single-shelf mode) or shelf view (multishelf mode), double-click the TXP, MXP, GE_XP, or 10GE_XP card where you want to change the ALS maintenance settings.

Step 2 Click the **Maintenance > ALS** tabs.

Step 3 Modify any of the settings described in Table 5-94. The provisionable parameters are listed in the Options column in the table.

Table 5-94 ALS Settings

Parameter	Description	Options
ALS Mode	Automatic laser shutdown. ALS provides the ability to shut down the TXP, MXP, GE_XP, and 10GE_XP TX laser when the card detects an LOS.	From the drop-down list, choose one of the following: • Disable—Deactivates ALS. • Auto Restart—(Default) ALS is active. The power is automatically shut down when needed and automatically tries to restart using a probe pulse until the cause of the failure is repaired. • Manual Restart • Manual Restart for Test
Recovery Pulse Duration	(Display only) Displays the duration of the optical power pulse that begins when an amplifier restarts.	—
Recovery Pulse Interval	(Display only) Displays the interval between optical power pulses.	—
Currently Shutdown	(Display only) Displays the current status of the laser.	—
Request Laser Restart	If checked, allows you to restart the laser for maintenance.	Checked or unchecked

Step 4 Click **Apply**. If the change affects traffic, a warning message displays. Click **Yes** to complete the change.

Stop. You have completed this procedure.

NTP-G192 Force FPGA Update

Purpose	This procedure forces an upgrade of the FPGA image on the MXP_MR_10DME_C and MXP_MR_10DME_L cards.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note Perform Step 1 through Step 4 if you are updating the node software. Otherwise continue with Step 5 to force FPGA image upgrade on MXP_MR_10DME_C or MXP_MR_10DME_L card.

Step 1 Close the CTC window, if open.

Step 2 Delete the CTC Cache from the CTC Launcher browser window.

Step 3 Close the CTC Launcher browser window.

Step 4 Relaunch the CTC Launcher browser window on the TCC.

Step 5 In node view (single-shelf mode) or shelf view (multishelf mode), double-click the MXP_MR_10DME_C or MXP_MR_10DME_L card to be upgraded.

Step 6 Click the **Provisioning > Line** tabs.

a. Click the **Admin State** table cell and choose **OOS,DSBLD** (ANSI) or **Locked,Disabled** (ETSI).

b. Click **Apply**, then **Yes**.

Step 7 Click the **Provisioning > Card** tabs.

Step 8 Change the Card Mode as needed:

- FC-GE_ISC—Choose this option if you will provision any of the following PPM port rates: FC1G (Ports 1-1 through 4-1), FC2G (Ports 1-1 and 3-1 only), FICON1G (Ports 1-1 through 4-1), FICON2G (Ports 1-1 and 3-1 only), ONE_GE (Ports 1-1 through 4-1), ISC3 COMPAT (Ports 1-1 through 4-1), ISC3 PEER 1G (Ports 1-1 through 4-1), and ISC3 PEER 2G (Ports 1-1 and 3-1 only).
- FC4G—Choose this option if you will provision an FC4G or FICON4G PPM (Port 1-1 only).

Step 9 Click the **Force FPGA Update** button. This upgrades the FPGA image in the MXP_MR_10DME_C or MXP_MR_10DME_L card, as appropriate. The MXP_MR_10DME_C or MXP_MR_10DME_L card reboots and the FPGA now contains the updated image.

Step 10 Click the **Provisioning > Line** tabs.

a. Click the **Admin State** table cell and choose **IS** (ANSI) or **Unlocked** (ETSI).

b. Click **Apply**, then **Yes**.

Stop. You have completed this procedure.

NTP-G196 Force FPGA Update when the Card is part of a Protection Group

Purpose	This procedure forces an upgrade of the FPGA image on the MXP_MR_10DME_C and MXP_MR_10DME_L cards when the card is part of a protection group.
Tools/Equipment	None
Prerequisite Procedures	DLP-G46 Log into CTC, page 2-27
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note This procedure applies to a near-end node that has two MXP_MR_10DME_C or MXP_MR_10DME_L cards, one card acting as the working card and the other as the protect card. The far-end node has a similar configuration. The near-end working card trunk port is connected to the far-end working card trunk port. The near-end protect card trunk port is connected to the far-end protect card trunk port.

Note Perform Step 1 through Step 4 if you are updating the node software. Otherwise, continue with Step 5 to force FPGA image upgrade on MXP_MR_10DME_C or MXP_MR_10DME_L card.

Step 1 Close the CTC window, if open.

Step 2 Delete the CTC Cache from the CTC Launcher browser window.

Step 3 Close the CTC Launcher browser window.

Step 4 Relaunch the CTC Launcher browser window on the TCC.

Step 5 Ensure traffic is running on the near-end and far-end working cards for each protection group on the MXP_MR_10DME_C or MXP_MR_10DME_L card.

Step 6 In node view (single-node mode) or multishelf view (multishelf mode), click the **Provisioning > Protection** tab.

Step 7 For each protection group, verify that the working card client port is reported as working/active and the protect card client port is reported as protect/standby.

Step 8 Repeat Steps 6 and 7 for the far-end node.

Step 9 For each protection group on the near-end and far-end nodes, complete the "DLP-G182 Apply a Lockout" task on page 10-44 to prevent traffic from switching to the protect card.

Step 10 At the near-end and far-end nodes, complete the "NTP-G192 Force FPGA Update" procedure on page 5-163 to force an upgrade of the FPGA image on the protect card.

Step 11 For each protection group on the near-end and far-end nodes, complete the "DLP-G183 Clear a Lock-On or Lockout" task on page 10-45 to remove a lockout and return a protection group to its usual switching method.

Step 12 For each protection group on the near-end and far-end nodes, complete the"DLP-G179 Apply a Force Y-Cable or Splitter Protection Switch" task on page 10-42 to move traffic from the working to the protect card.

Step 13 At the near-end and far-end nodes, complete the "NTP-G192 Force FPGA Update" procedure on page 5-163 to force an upgrade of the FPGA image on the working card.

Step 14 For each protection group on the near-end and far-end nodes, complete the "DLP-G180 Clear a Manual or Force Y-Cable or Splitter Protection Switch" task on page 10-43 to clear a Force protection switch on the working card. If the protection group is revertive, this operation causes the traffic to revert to the working card. If the protection group is non-revertive, this operation causes the traffic to remain on the protect card.

Stop. You have completed this procedure.